Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC, Sol	80,84,92, 160,580	Var	1	123

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

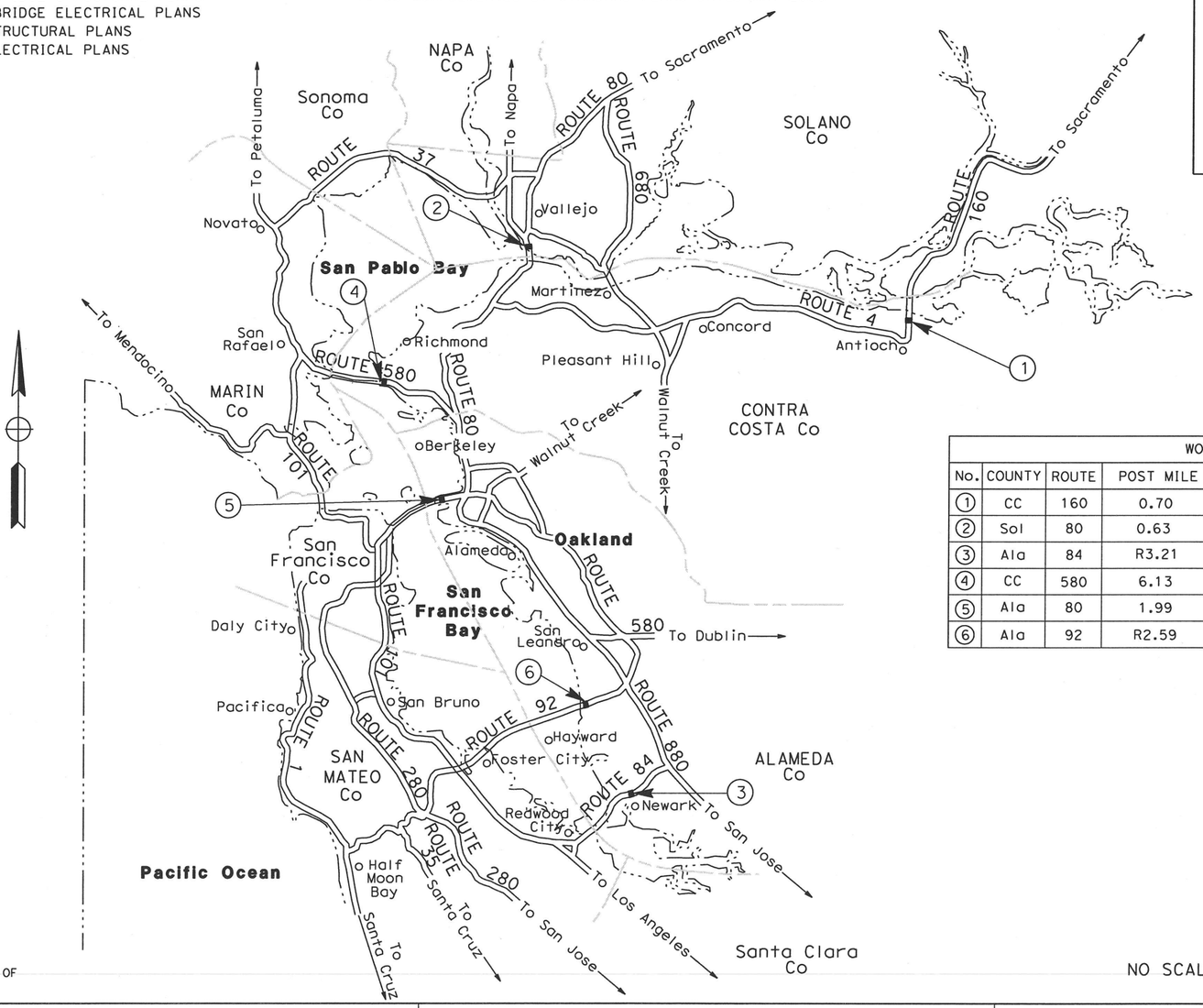
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN ALAMEDA, CONTRA COSTA AND SOLANO COUNTIES ON ROUTES 80, 84, 92, 160, AND 580 AT THE TOLL PLAZA SITES

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

INDEX OF PLANS



NO SCALE

WORK LOCATIONS				
No.	COUNTY	ROUTE	POST MILE	DESCRIPTION
(1)	CC	160	0.70	Antioch Bridge Toll Plaza
(2)	Sol	80	0.63	Carquinez Bridge Toll Plaza
(3)	Ala	84	R3.21	Dumbarton Bridge Toll Plaza
(4)	CC	580	6.13	Richmond-San Rafael Bridge Toll Plaza
(5)	Ala	80	1.99	San Francisco-Oakland Bay Bridge Toll Plaza
(6)	Ala	92	R2.59	San Mateo-Hayward Bridge Toll Plaza

3/12/10

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER

DATE

REGISTERED PROFESSIONAL ENGINEER
RAMSEY J. HISSEN
No. C-39608
Exp. 12-31-10
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

BAY AREA TOLL AUTHORITY (BATA)
101 EIGHTH STREET
OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET, SUITE 1500
SAN JOSE, CA 95113

CONTRACT No. **04-TBD**

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CONSULTANT DESIGN ENGINEER	CALTRANS DESIGN OVERSIGHT APPROVAL	REGISTRATION No.	LICENSE Exp DATE	DATE SIGNED

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:43:26 AM
LAST REVISION 00-00-00

BORDER LAST REVISED 2/1/2008 | CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => Florin_Lapustea DGN FILE => ...\Final Plans\43A675ab001.dgn | CU 00000 | EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	2	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
RAMSEY J. HISSEN
No. C-39608
Exp. 12-31-10
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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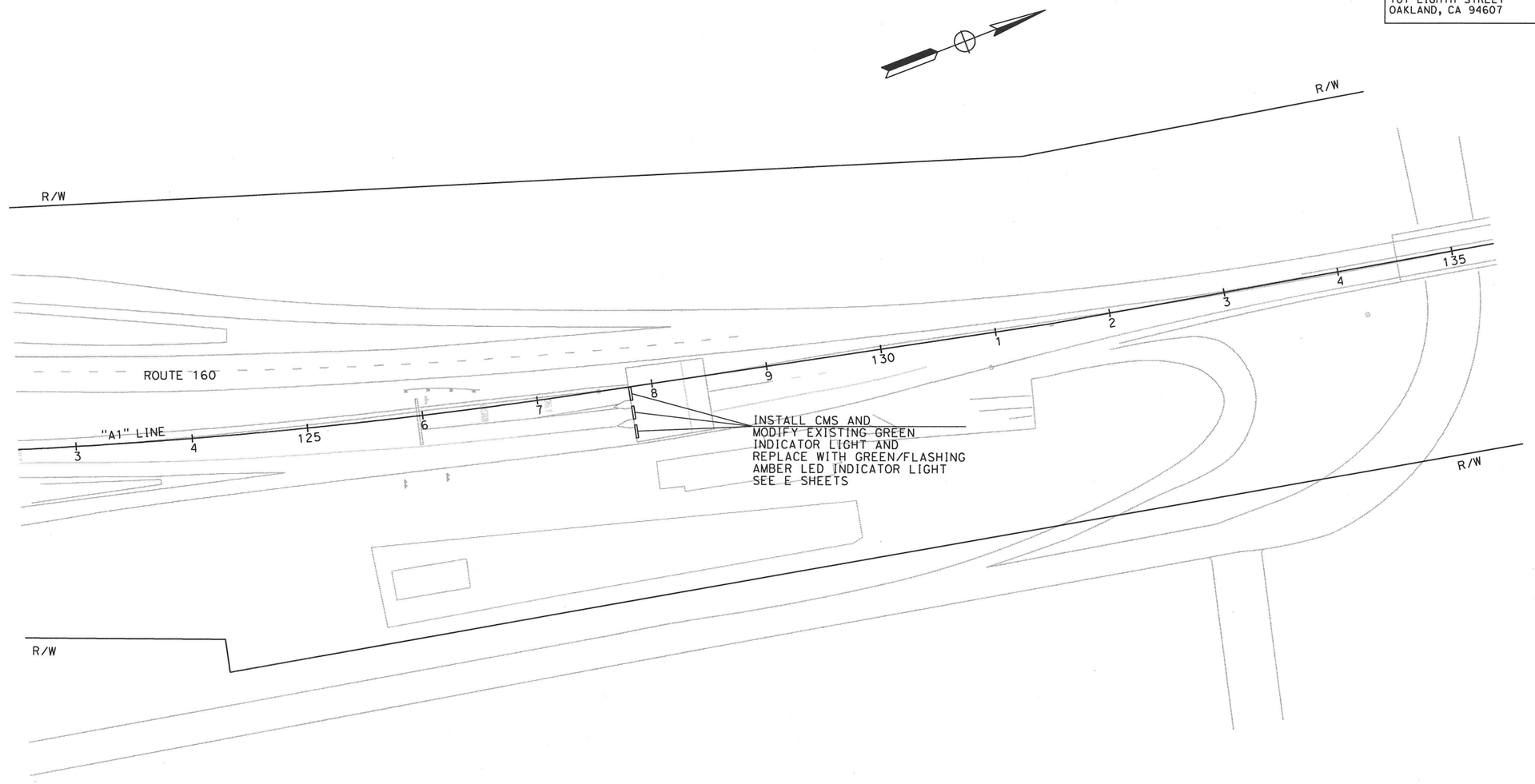
OAKLAND, CA 94607

URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113

LEGEND:

- ● EXISTING SIGN TO REMAIN
- ■ REMOVE SIGN
- CMS CHANGEABLE MESSAGE SIGN
- EMS EXTINGUISHABLE MESSAGE SIGN



FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

ANTIOCH BRIDGE
LAYOUT
L-1

SCALE: 1":50'

LAST REVISION 00-00-00
DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:45:23 AM

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY | CONSULTANT FUNCTIONAL SUPERVISOR | STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | Caltrans

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => ...\02_Antioch\Layout\ANT-L-01.dgn

CU 00000

EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	3	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. C-39608 Exp. 12-31-10 CIVIL STATE OF CALIFORNIA

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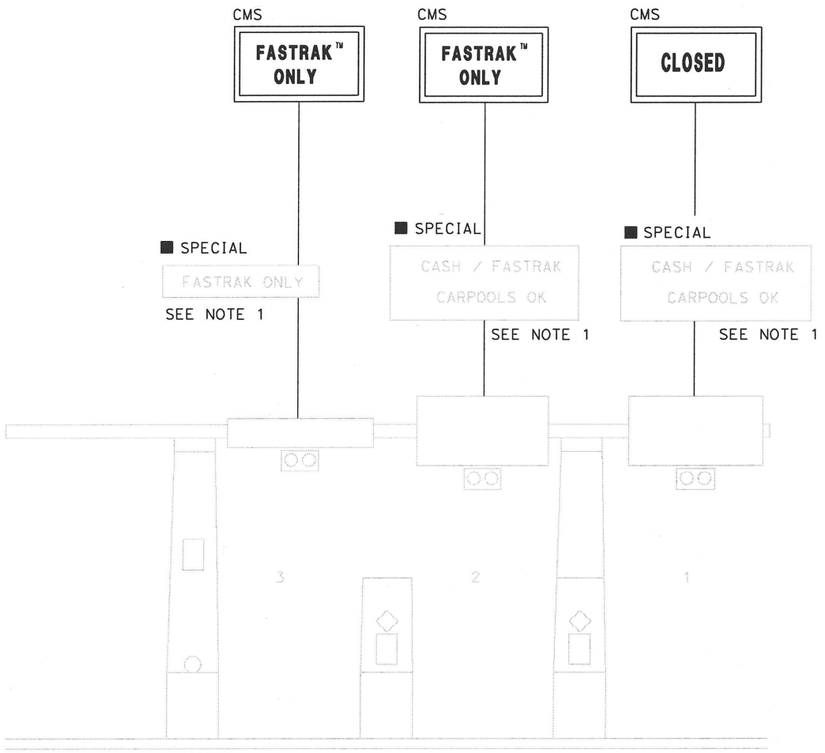
OAKLAND, CA 94607

URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113

NOTE:

1. REMOVE SIGN PANEL AND SEAL PANEL BOLT HOLES



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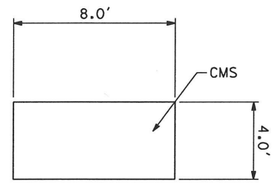

TYPE 2 CMS PANEL

(MOUNTED ON TOLL PLAZA CANOPY)

FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

ANTIOCH BRIDGE
LAYOUT
L-2

LAST REVISION 00-00-00 | DATE PLOTTED => 3/15/2010 TIME PLOTTED => 7:45:53 AM

REVISED BY	DATE REVISED
.	.

CALCULATED-DESIGNED BY .
CHECKED BY .
DRAWN BY
CONSULTANT FUNCTIONAL SUPERVISOR .
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => Madalina_Lapustea DGN FILE => ...\02_Antioch\Layout\ANT-L-02.dgn | CU 00000 | EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	4	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No. C-39608
Exp. 12-31-10
CIVIL
STATE OF CALIFORNIA

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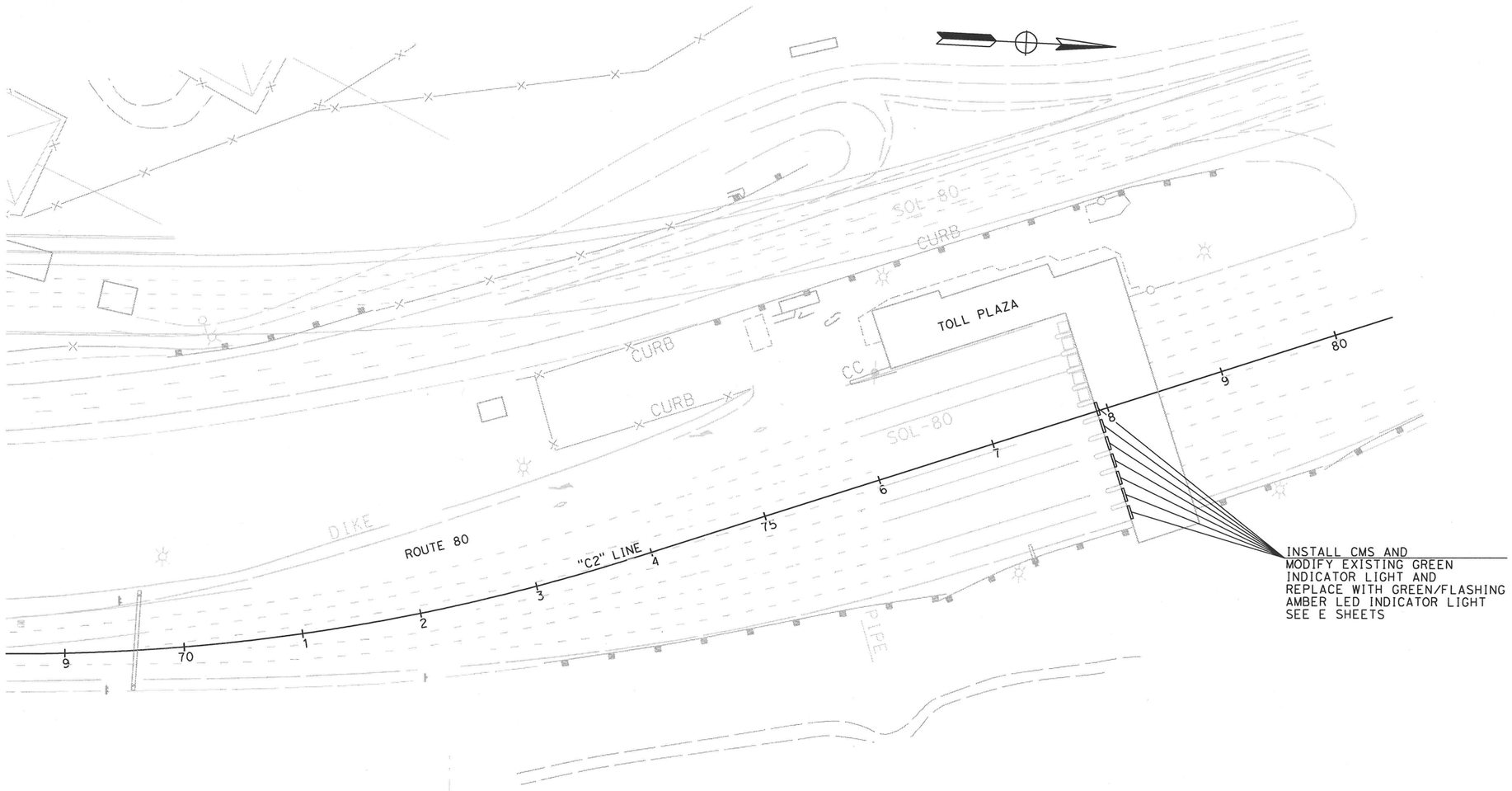
San Jose, CA 95113



FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

CARQUINEZ BRIDGE
LAYOUT
L-3

SCALE: 1":50'

CONSULTANT FUNCTIONAL SUPERVISOR	RAMSEY HISSEN
CALCULATED-DESIGNED BY	ELIE ABI-JAOUDE
CHECKED BY	BEN RAZEGHI
REVISED BY	
DATE REVISED	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:46:39 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => ...\Layout\CARQ-L-01.dgn

CU 00000

EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	5	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

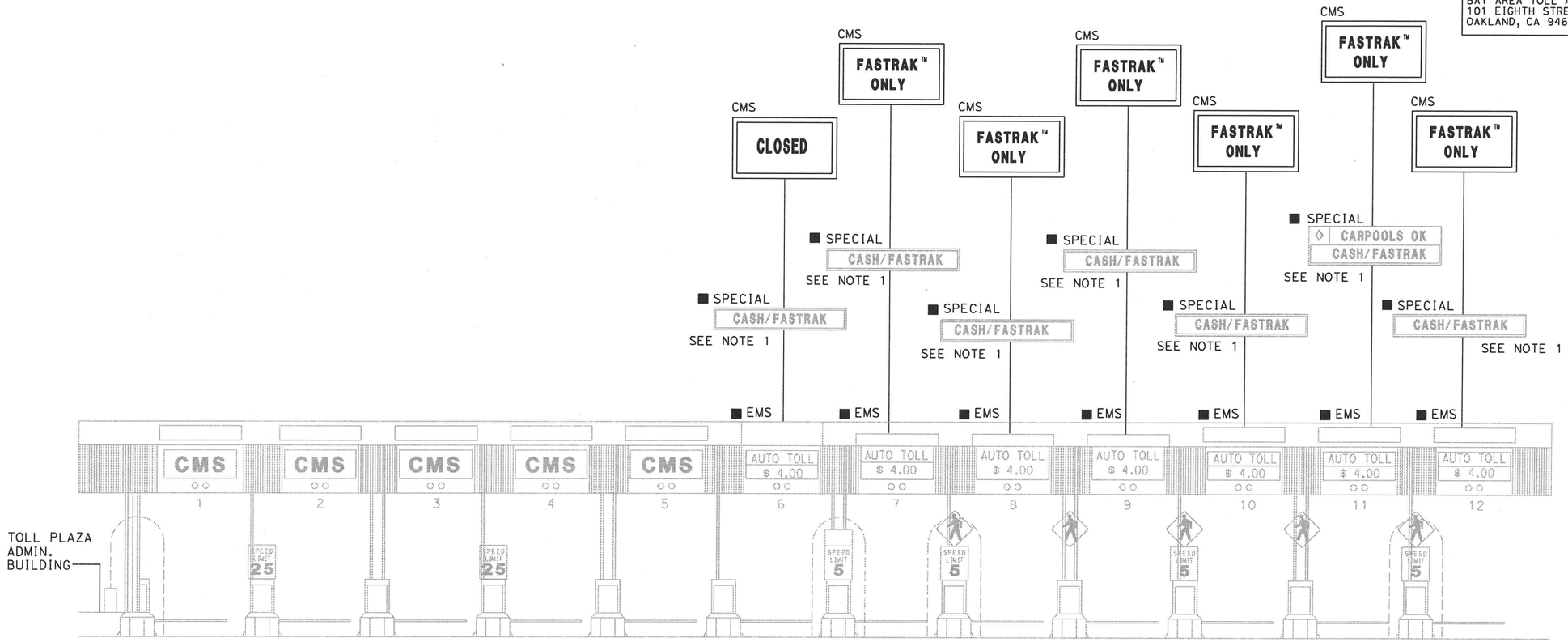
REGISTERED PROFESSIONAL ENGINEER — No. C-39608 — Exp. 12-31-10 — CIVIL — STATE OF CALIFORNIA

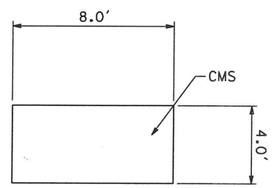
BAY AREA TOLL AUTHORITY
101 EIGHTH STREET
OAKLAND, CA 94607

URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113

NOTE:

1. REMOVE SIGN PANEL AND SEAL PANEL BOLT HOLES





TYPE 2 CMS PANEL
(MOUNTED ON TOLL PLAZA CANOPY)

FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

NO SCALE

CARQUINEZ BRIDGE
LAYOUT
L-4

CALCULATED-DESIGNED BY	ELIE ABI-JAOUDE	REVISED BY	
CHECKED BY	BEN RAZEGHI	DATE REVISED	
CONSULTANT FUNCTIONAL SUPERVISOR	RAMSEY HISSEN		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:48:43 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	6	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No. C-39608
Exp. 12-31-10
CIVIL
STATE OF CALIFORNIA

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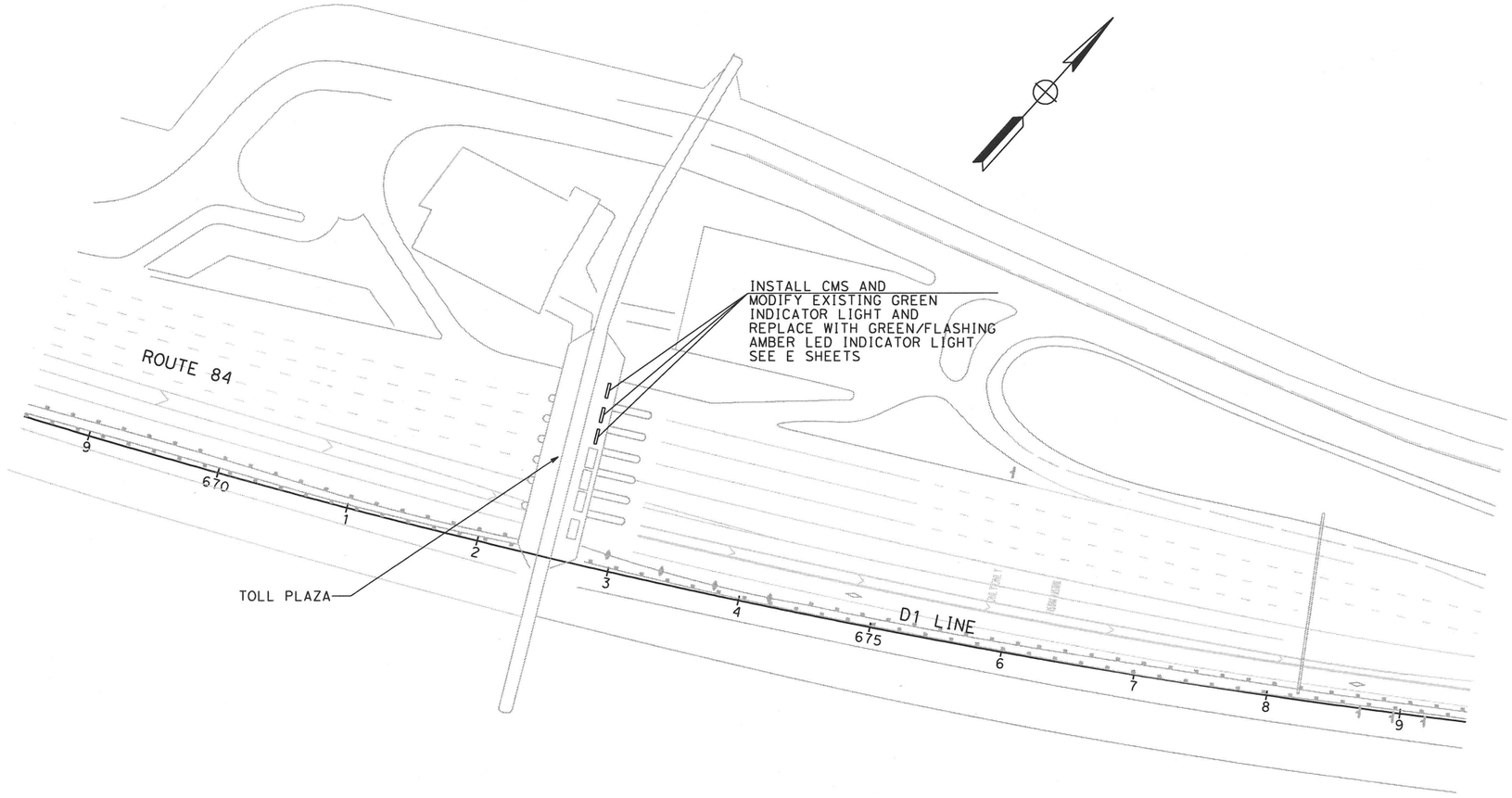
San Jose, CA 95113



FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DUMBARTON BRIDGE
LAYOUT
SCALE: 1":50' **L-5**

REVISED BY	DATE REVISED
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CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => ...\Layout\DB-L-01.dgn

CU 00000

EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	7	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. C-39608 Exp 12-31-10 CIVIL STATE OF CALIFORNIA

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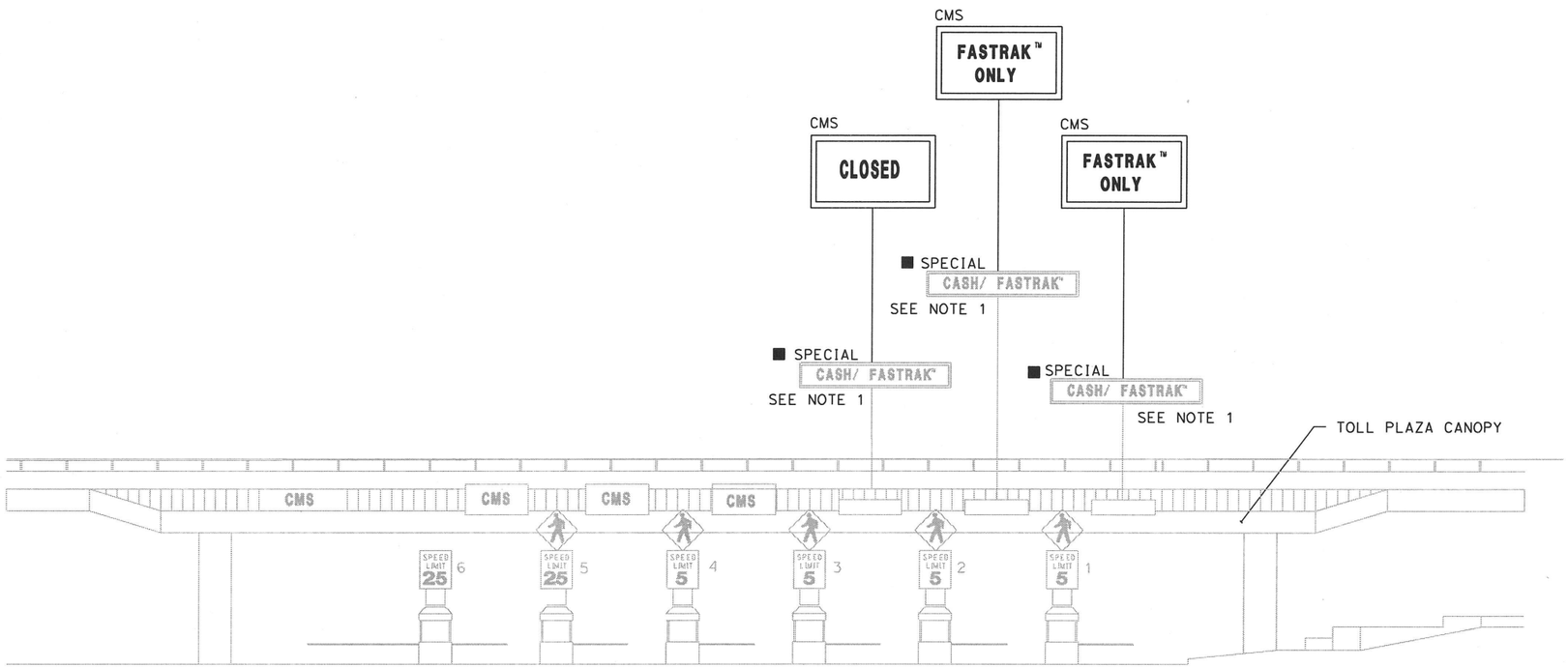
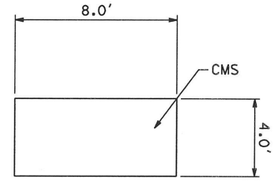
OAKLAND, CA 94607

URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113

NOTE:

1. REMOVE SIGN PANEL AND SEAL PANEL BOLT HOLES





TYPE 2 CMS PANEL
(MOUNTED ON TOLL PLAZA CANOPY)

FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

NO SCALE

DUMBARTON BRIDGE
LAYOUT
L-6

REVISED BY	DATE REVISED
CALCULATED-DESIGNED BY .	CHECKED BY .

CONSULTANT FUNCTIONAL SUPERVISOR .

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DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:49:55 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => ...\Layout\DB-L-02.dgn

CU 00000

EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	8	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No. C-39608
Exp. 12-31-10
CIVIL
STATE OF CALIFORNIA

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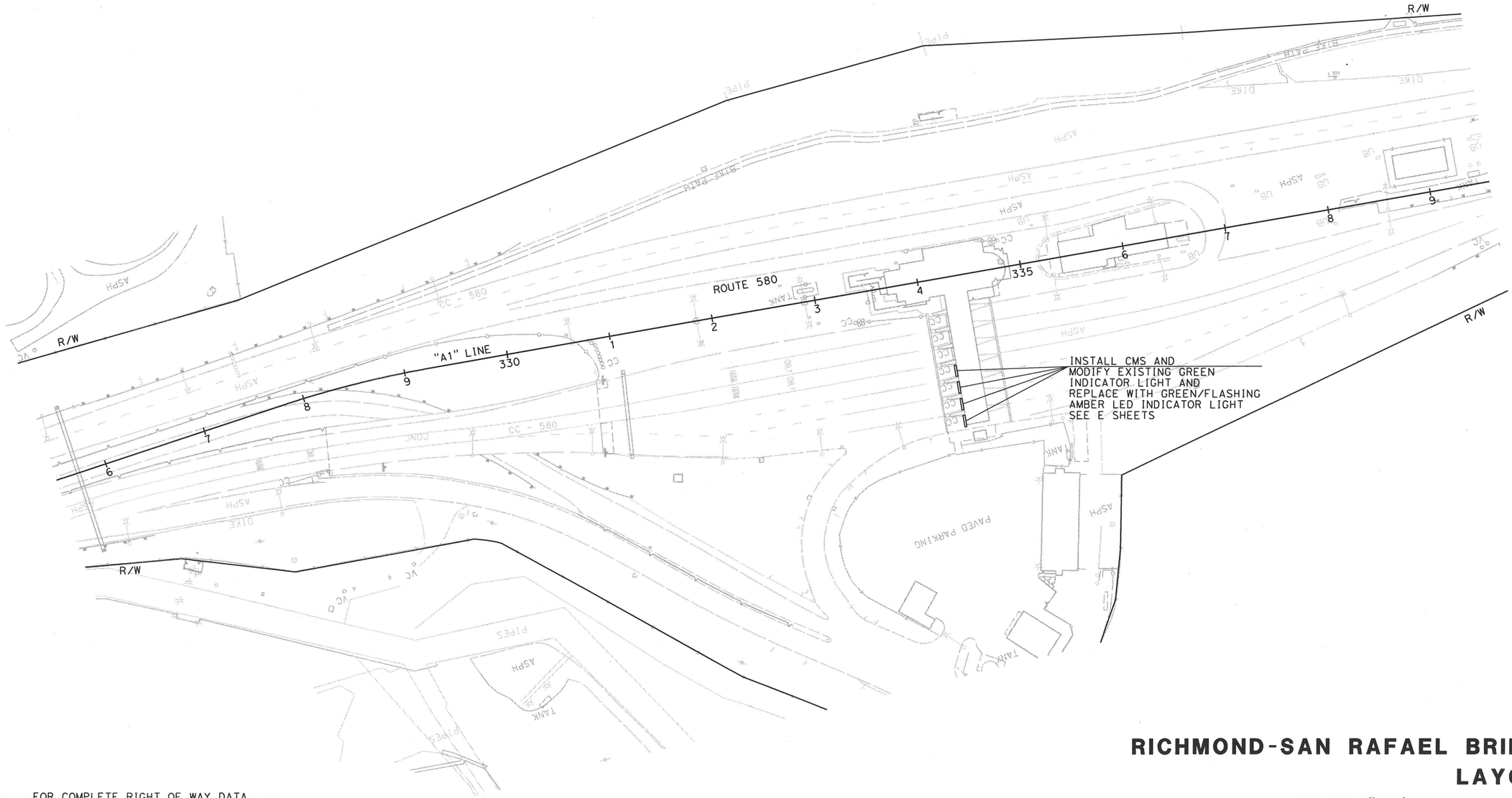
55 South Market Street
Suite 1500
San Jose, CA 95113



FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

RICHMOND-SAN RAFAEL BRIDGE
LAYOUT

SCALE: 1":50'

L-7

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CALCULATED-DESIGNED BY .
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CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:50:44 AM

BORDER LAST REVISED 4/11/2008

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CU 00000

EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	9	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. C-39608 Exp. 12-31-10 CIVIL STATE OF CALIFORNIA

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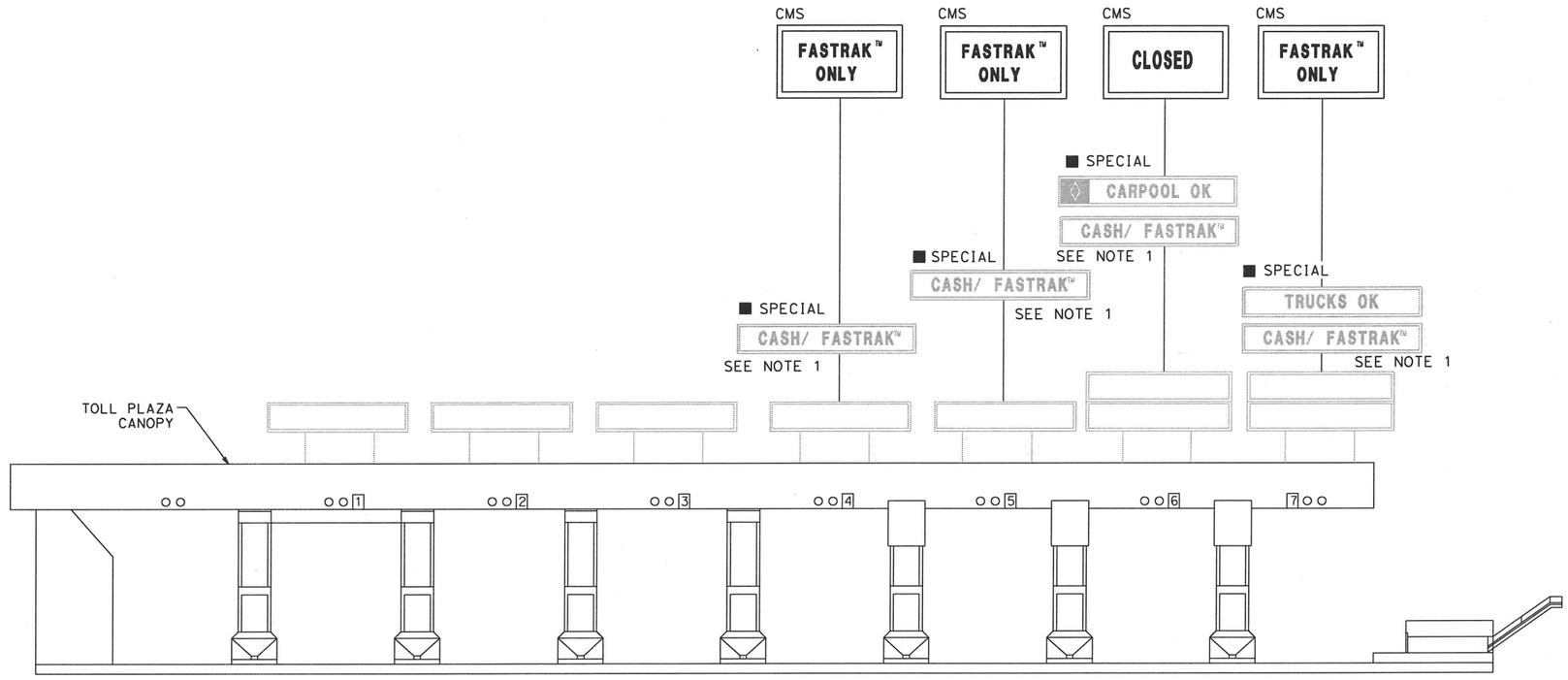
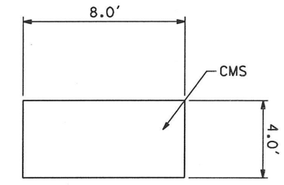
OAKLAND, CA 94607

URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113

NOTE:

1. REMOVE SIGN PANEL AND SEAL PANEL BOLT HOLES





TYPE 2 CMS PANEL

(MOUNTED ON TOLL PLAZA CANOPY)

FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

NO SCALE

RICHMOND-SAN RAFAEL BRIDGE
LAYOUT
L-8

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CONSULTANT FUNCTIONAL SUPERVISOR .

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DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:52:04 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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CU 00000

EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	80	1.99	10	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. C-39608 Exp. 12-31-10 CIVIL STATE OF CALIFORNIA

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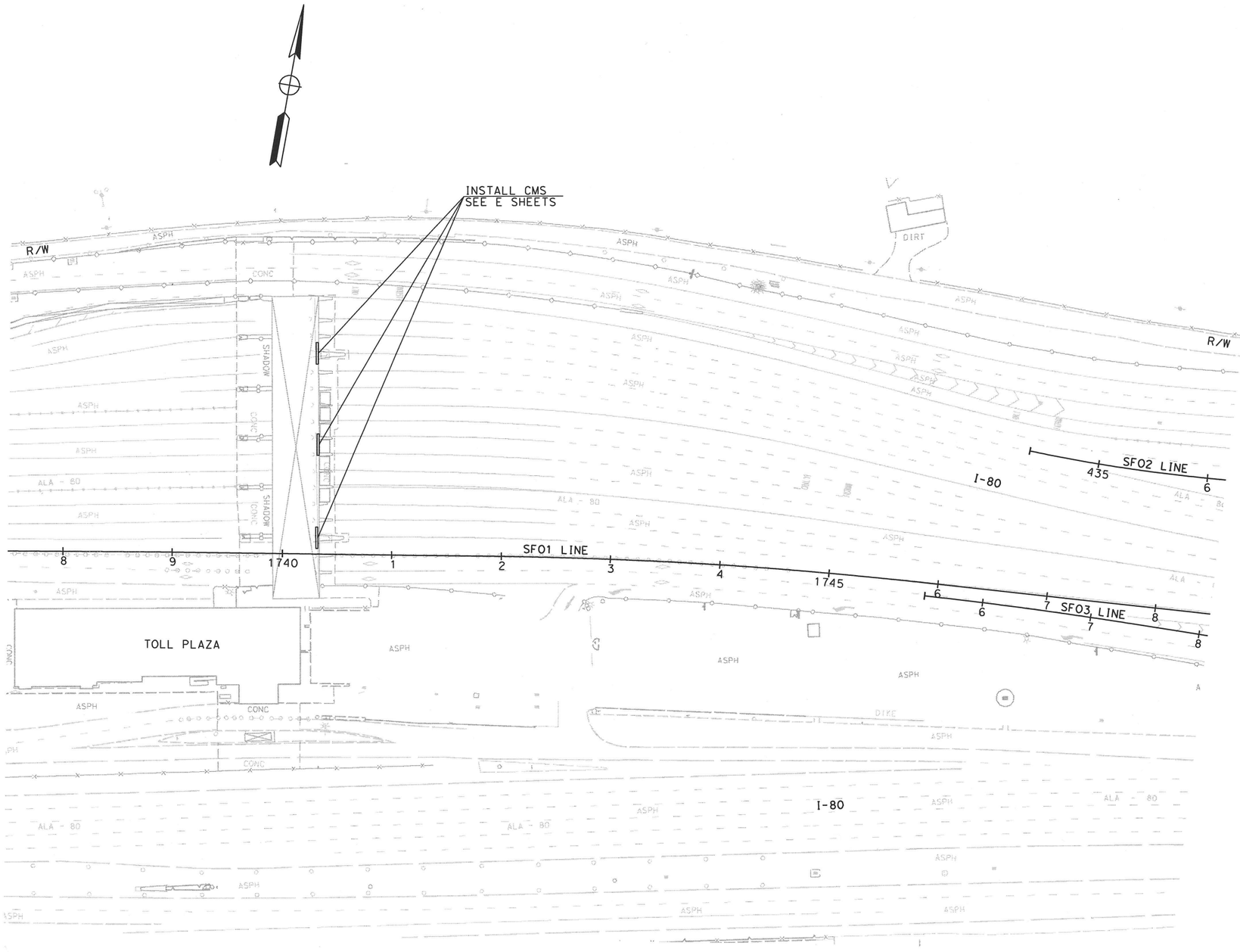
URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113



FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

SAN FRANCISCO-OAKLAND BAY BRIDGE
LAYOUT
L-9

SCALE: 1":50'

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .

CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:52:47 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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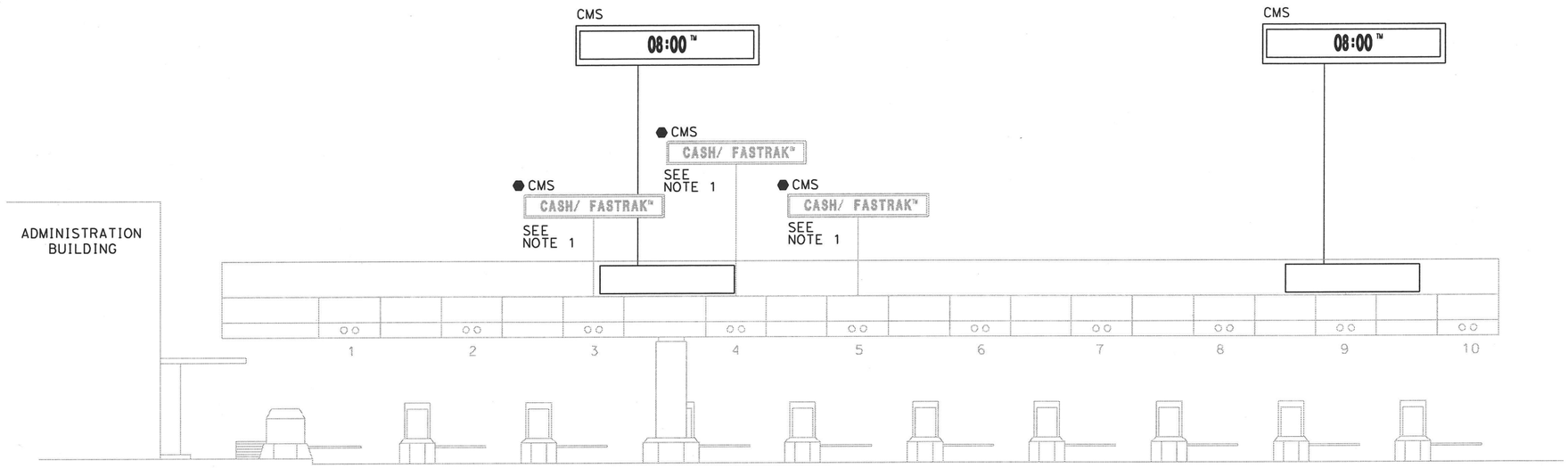
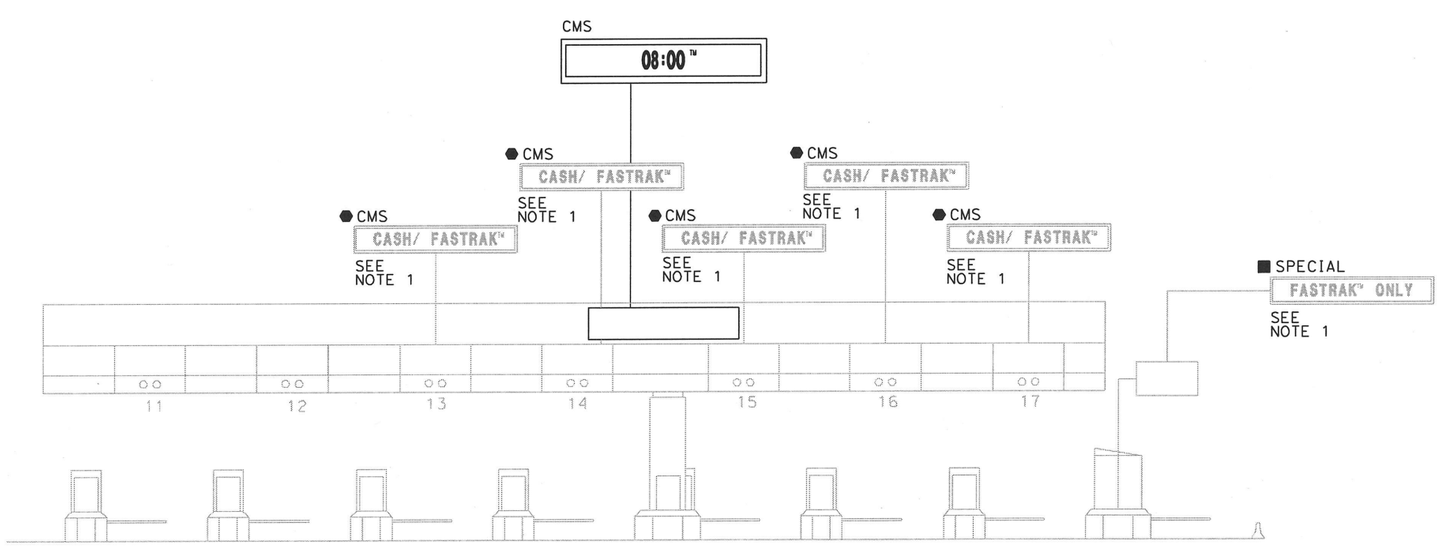
DGN FILE => ...\08_SFOBB\Layout\SFOBB-L-1.dgn

CU 00000

EA TBD (BATA-0006)

NOTE:
1. REMOVE SIGN PANEL AND SEAL PANEL BOLT HOLES





FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	80	1.99	11	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No. C-39608
Exp 12-31-10
CIVIL
STATE OF CALIFORNIA

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URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113

SAN FRANCISCO-OAKLAND BAY BRIDGE
LAYOUT
L-10

REVISED BY	DATE REVISED
.	.

CALCULATED-DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR .
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:53:18 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => Madalina_Lapustea
DGN FILE => ...\08_SFOBB\Layout\SFOBB-L-2.dgn

CU 00000

EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	92	R2.59	12	123

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No. C-39608
Exp. 12-31-10
CIVIL
STATE OF CALIFORNIA

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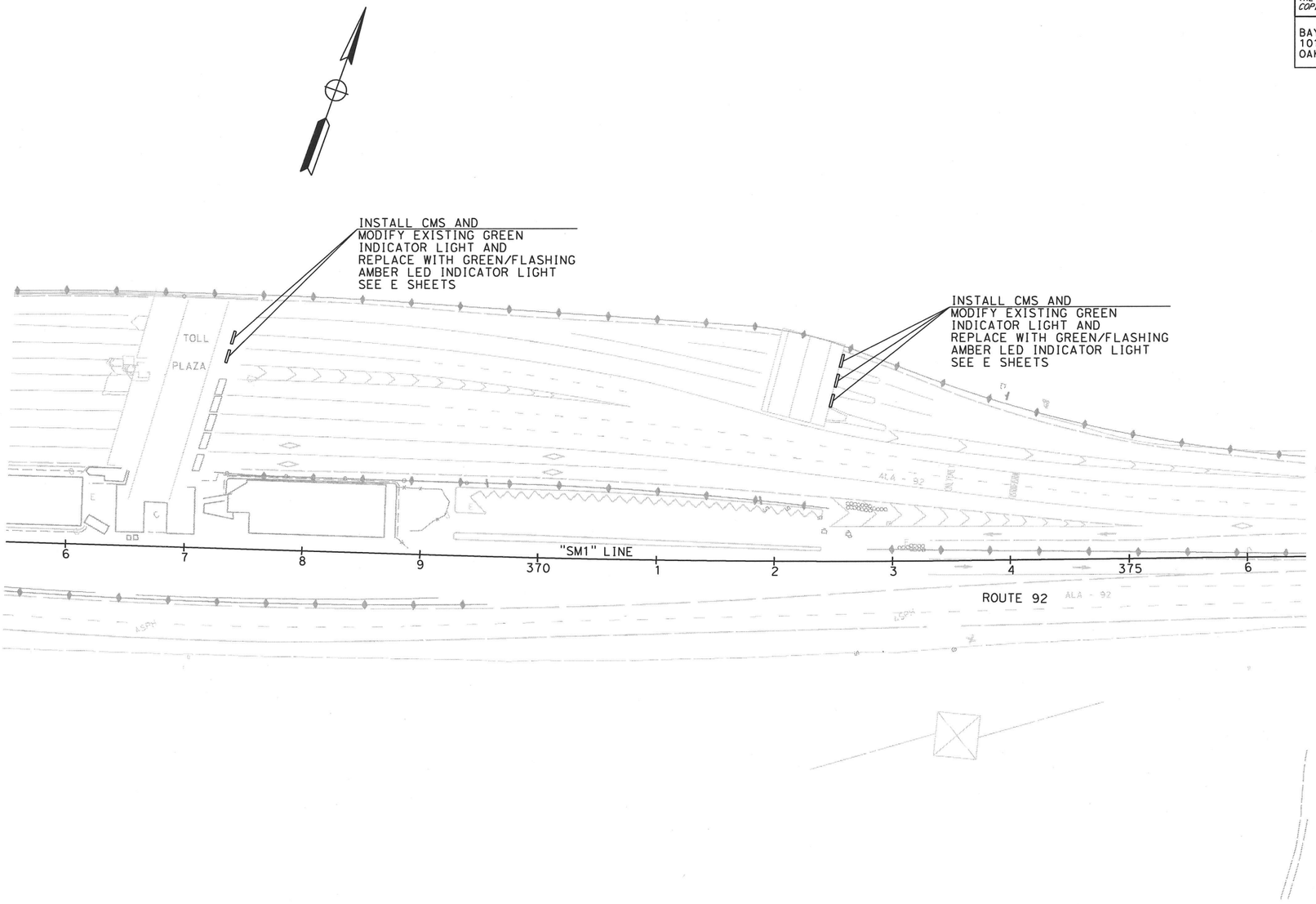
OAKLAND, CA 94607

URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113



SAN MATEO-HAYWARD BRIDGE
LAYOUT
L-11

SCALE: 1":50'

FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

	REVISED BY	DATE REVISED
CALCULATED-DESIGNED BY .		
CHECKED BY .		

CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:53:47 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

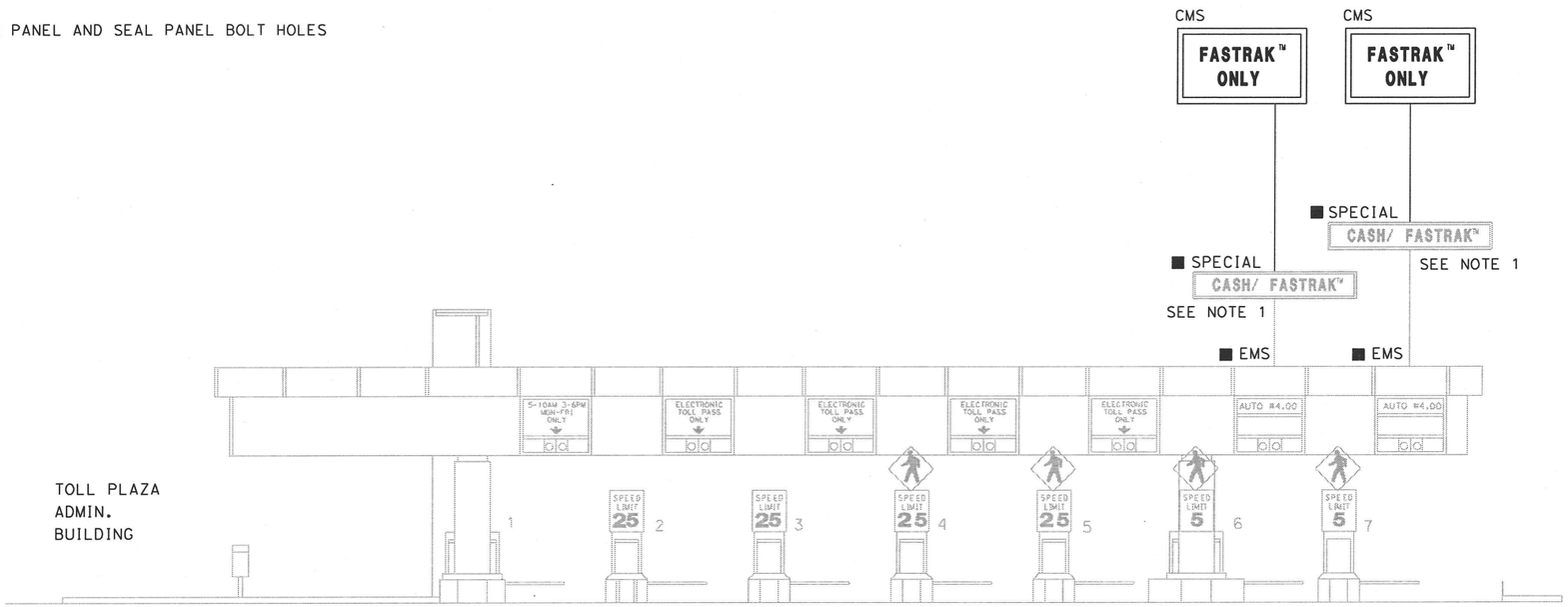
USERNAME => Madalina_Lapustea
DGN FILE => ...\07_SanMateo\Layout\SM-L-01.dgn

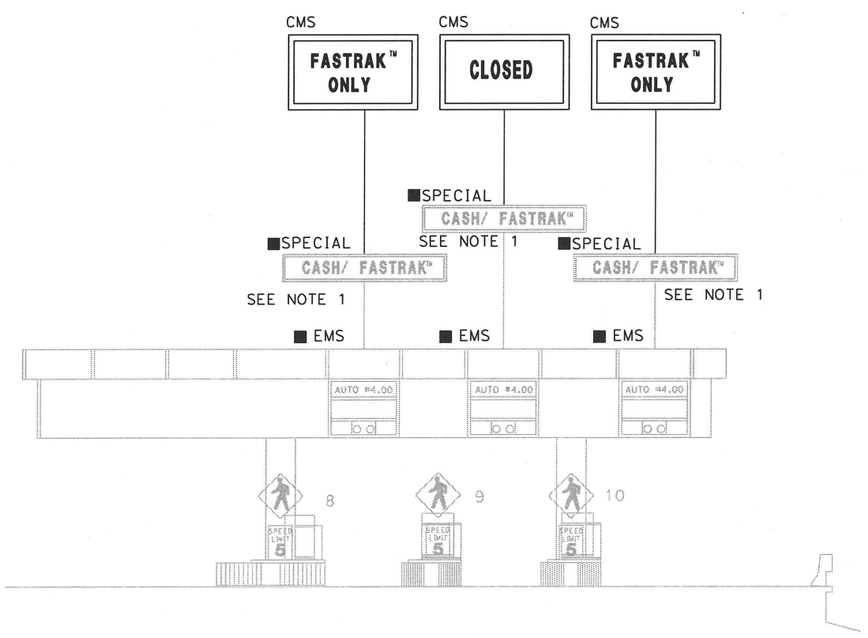
CU 00000

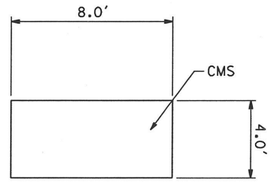
EA TBD (BATA-0006)

NOTE:

1. REMOVE SIGN PANEL AND SEAL PANEL BOLT HOLES







TYPE 2 CMS PANEL

(MOUNTED ON TOLL PLAZA CANOPY)

FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

NO SCALE

SAN MATEO-HAYWARD BRIDGE
LAYOUT
L-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	92	R2.59	13	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12-31-10 — CIVIL — STATE OF CALIFORNIA

BAY AREA TOLL AUTHORITY
101 EIGHTH STREET
OAKLAND, CA 94607

URS CORPORATION
55 South Market Street
Suite 1500
San Jose, CA 95113

REVISED BY	DATE REVISED
.	.

CALCULATED-DESIGNED BY .
CHECKED BY .

CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 3/15/2010
TIME PLOTTED => 7:55:40 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	CC	160	0.70	14	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

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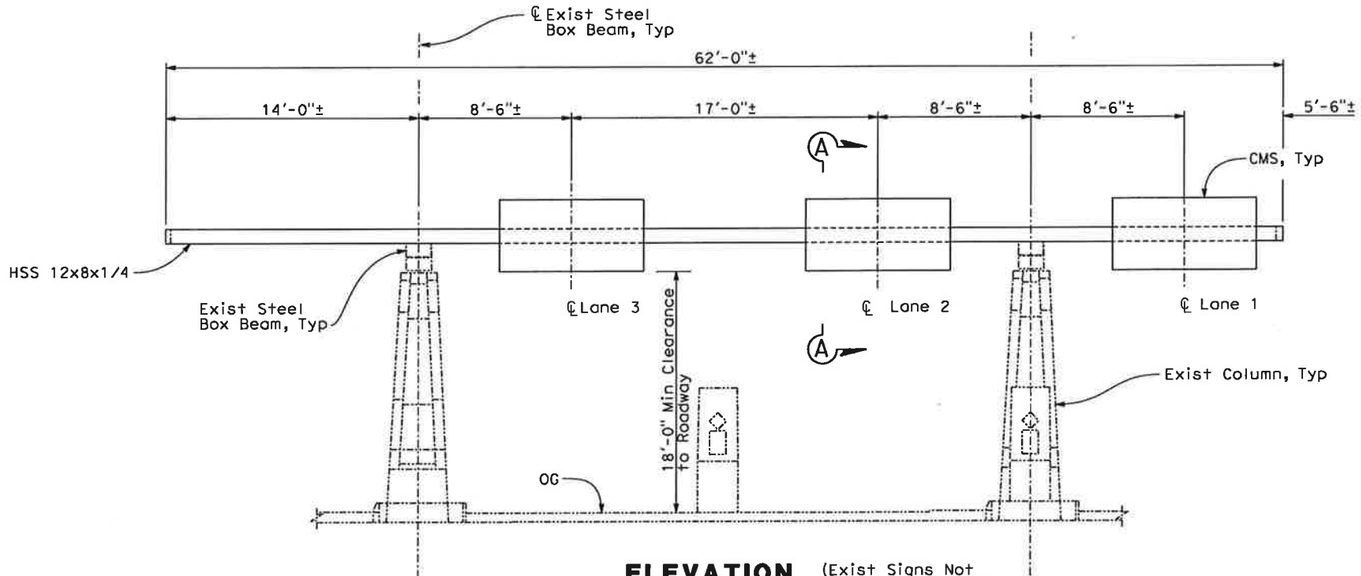
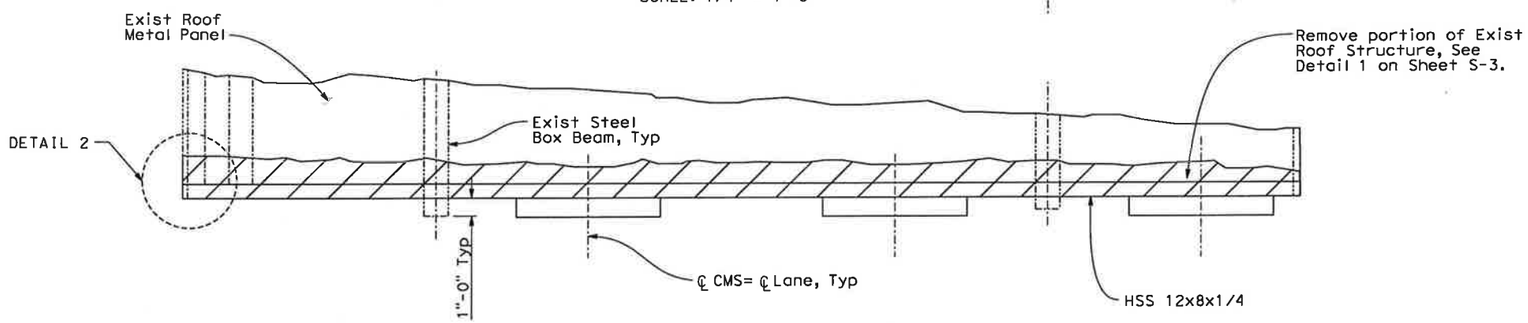
BAY AREA TOLL AUTHORITY
101 EIGHT STREET
OAKLAND, CALIFORNIA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



ELEVATION (Exist Signs Not Shown for Clarity)
SCALE: 1/4" = 1'-0"



PLAN
SCALE: 1/4" = 1'-0"

Notes:

1. Exist signs, including wood posts, to be removed prior to installing new CMS supports.
2. For Section A-A, See Sheet S-2.
3. All new steel members shall be galvanized.
4. All bolts, washers and lock nuts shall be of stainless steel or galvanized.

Legend:

——— Indicates New Structure

- - - - - - Indicates Exist Structure

Indicates removal of portion of Exist roof structure

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT / SIGN OFF DATE		DESIGN BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER
		DETAILS BY E. Garnica	CHECKED		
		QUANTITIES BY	CHECKED		

CU EA TBD (BATA-0006)

BRIDGE NO. | POST MILE 0.70

ANTIOCH BRIDGE TOLL PLAZA
CMS SUPPORT DETAILS

SHEET **S-1**

DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)										SHEET	OF
03/12/10										1	3

FILE => ...\02_Antioch\Structural\S-01.dgn

USERNAME => Florin_Lopez PLOTTED => 3/12/2010 TIME PLOTTED => 9:55:26 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	CC	160	0.70	15	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

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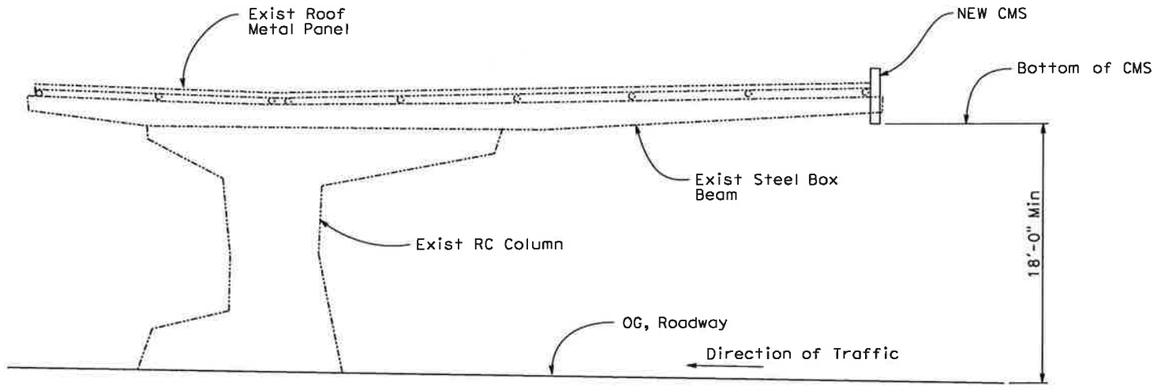
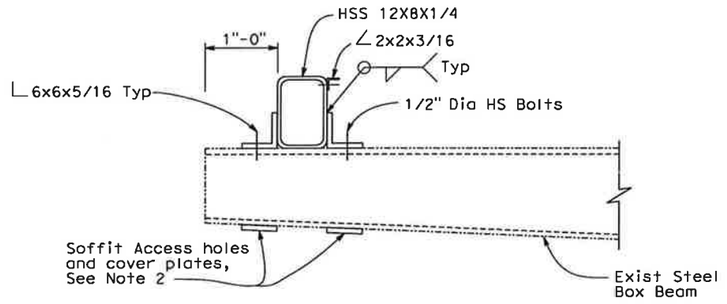
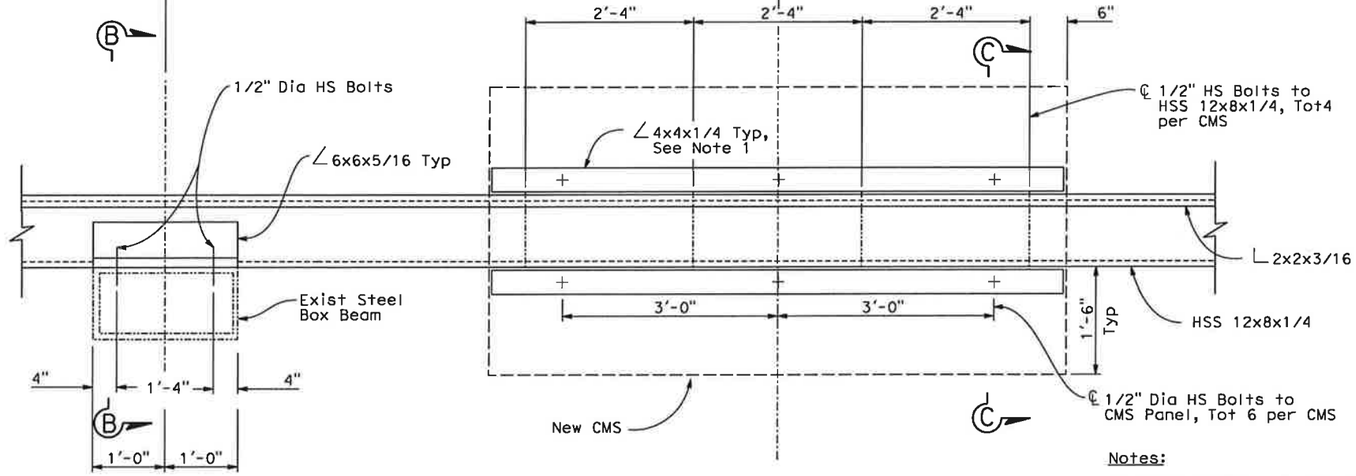
MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



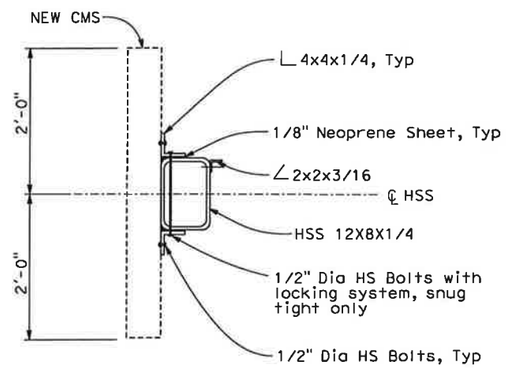
SECTION A-A
NO SCALE



SECTION B-B
SCALE: 1" = 1'-0"



PART ELEVATION
(Back of CMS)
SCALE: 1" = 1'-0"



SECTION C-C
SCALE: 1" = 1'-0"

Notes:

1. Angle sections to be prefabricated and attached to CMS, and made of aluminum.
2. For access hole and cover plate details see Sheet S-3.

Legend:

——— Indicates New Structure

- - - - - - Indicates Exist Structure

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT / SIGN OFF DATE		DESIGN BY G. Xu CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER	BRIDGE NO.	ANTIOCH BRIDGE TOLL PLAZA CMS SUPPORT DETAILS	SHEET S-2
		DETAILS BY E. Garnica CHECKED			POST MILE 0.70		
DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)		QUANTITIES BY CHECKED	CU EA TBD (BATA-0006)		DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY) 03/12/10	SHEET 2 OF 3

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

FILE => ...\02_Antioch\Structural\S-02.dgn

USERNAME => Florin_Lo@MGE@ PLOTTED => 3/12/2010 TIME PLOTTED => 9:56:00 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	CC	160	0.70	16	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

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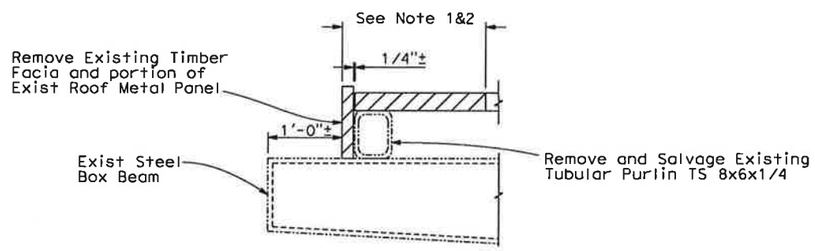
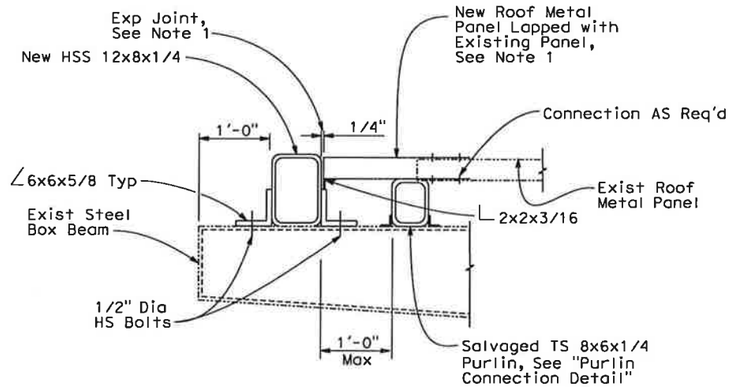
BAY AREA TOLL AUTHORITY
101 EIGHT STREET
OAKLAND, CALIFORNIA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



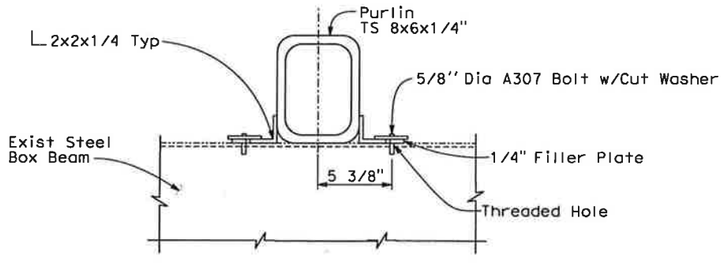
EXISTING CONDITION



PROPOSED CONDITION

DETAIL 1

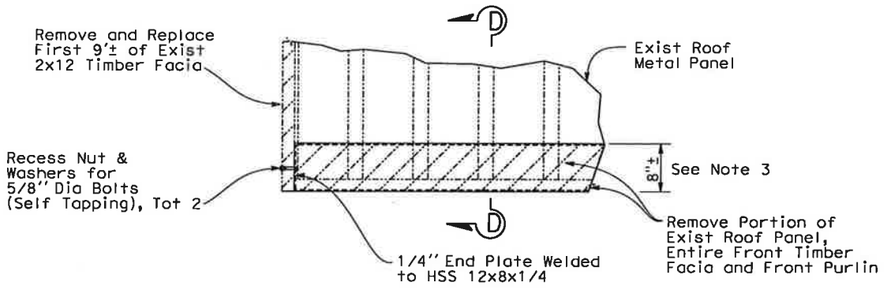
SCALE: 1" = 1'-0"



PURLIN CONNECTION DETAIL

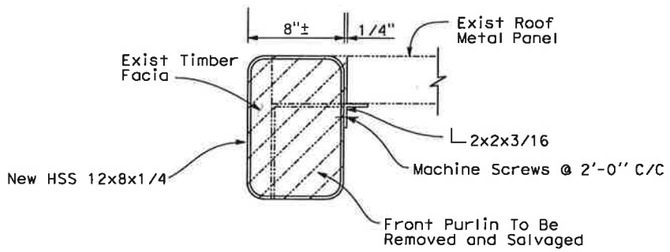
SCALE: 1/2" = 1'-0"

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.



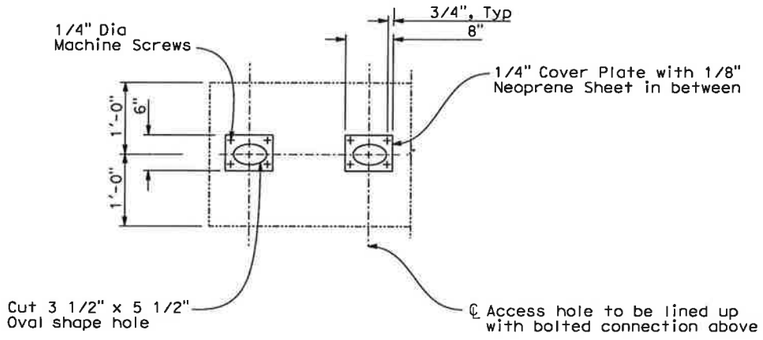
DETAIL 2

SCALE: 1'' = 1'-0''



SECTION D-D

SCALE: 1/2" = 1'-0"



(Soffit view of Exist Steel Box Beam)

SOFFIT ACCESS HOLE AND COVER PLATE DETAIL

SCALE: 1" = 1'-0"

Notes:

1. Remove Portion of Existing Roof Metal Panels as Required to Provide Access for New CMS Support Connection. The Roof Panels Shall be Restored in Kind With Water Proof Membrane at Joints and Connections.
2. Exist metal roof panel consists of 18 G.A. Min S=0.736 in'/ft of width, I=

Legend:

- ——— Indicates New Structure
- ····· Indicates Exist Structure
- ▨ Indicates removal of portion of Exist roof structure

DESIGN OVERSIGHT		DESIGN	BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER	BRIDGE NO.
SIGN OFF DATE		DETAILS	BY E. Garnica	CHECKED			POST MILE 0.70
DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)		QUANTITIES	BY	CHECKED	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	CU EA TBD (BATA-0006)	DISREGARD PRINTS BEARING EARLIER REVISION DATES →

ANTIOCH BRIDGE TOLL PLAZA
CMS SUPPORT DETAILS

SHEET S-3

REVISION DATES (PRELIMINARY STAGE ONLY): 03/12/10

SHEET 3 OF 3

FILE => ...\02_Antioch\Structural\S-03.dgn

USERNAME => Flori_Lo DATE PLOTTED => 3/12/2010 TIME PLOTTED => 9:56:33 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	17	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

RAMSEY J. HISSEN, No. C-39608, Exp.12/31/10, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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BAY AREA TOLL AUTHORITY
101 EIGHTH STREET
OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE LATEST VERSION OF THE CALTRANS STANDARD PLAN AND SPECIFICATIONS.
2. CALL UNDERGROUND SERVICE ALERT 48 HOURS BEFORE EXCAVATION U.S.A. (800) 277-2600.
3. ALL ELECTRICAL AND CMS EQUIPMENT, INFRASTRUCTURE, LANDSCAPING OR BUILDINGS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. ALL ELECTRICAL AND CMS EQUIPMENT INCLUDING CONDUITS, JUNCTION AND SPLICE EQUIPMENT RACK ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER.
5. SERVICE EQUIPMENT, AND CMS CABINET ENCLOSURES, CONTROLLER ASSEMBLIES, CMS AND OTHER ELECTRICAL EQUIPMENT ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATION SHALL BE DETERMINED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
6. ALL EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHOWN ON THE PLANS IS FOR REFERENCE AND SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. LOCATIONS ARE APPROXIMATED. ANY DAMAGE TO THE EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.
7. NEW CIRCUIT BREAKERS TO BE INSTALLED TO EXISTING PANEL BOXES SHALL MATCH THE EXISTING TYPE OR APPROVED BY THE ENGINEER AS REQUIRED.
8. ALL DIMENSIONS INDICATED ARE TO BE VERIFIED IN FIELD PRIOR TO COMMENCING WORK.
9. THE CONTRACTOR SHALL IDENTITY AND VERIFY ALL EXISTING UTILITIES, POWER SOURCES AND POWER CONSUMPTIONS AS REQUIRED OR NEEDED AS SHOWN ON THE PLANS PRIOR TO COMMENCING WORK.
10. SEE STRUCTURAL PLANS FOR EXACT LOCATION OF CMS STRUCTURES, FRAMES AND MOUNTING BRACKETS.
11. ALL ABOVE GROUND CONDUIT SHALL BE SUPPORTED AT A MINIMUM OF EVERY 5 FEET.
12. ALL ELECTRICAL ITEMS THAT USE ANCHORS TO ATTACH TO THE CONCRETE STRUCTURES SHALL USE STAINLESS STEEL POWER STUD ANCHORS-THREADED VERSION SIZED PER MANUFACTURER RECOMMENDATION AND EPOXY ANCHOR HOLES USING SEALANT WITH A RATED LIFE OF 25 YEARS OR GREATER.
13. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE CEC, NEC & NATIONAL ELECTRICAL SAFETY CODE. ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER NEC REQUIREMENTS. ALL COMPONENTS INCLUDING CONDUITS JUNCTION BOXES, CABLING, EQUIPMENT, AND CABINETS SHALL BE CLEARLY LABELED WITH PROPER TAGS, NAME PLATES, AND I.D. LABELS.
14. CONTRACTOR SHALL USE TYPE 1 CONDUIT IN TUNNEL AND TRENCH, TYPE 2 CONDUIT FOR EXPOSED CONDITIONS AND TYPE 4 FLEXIBLE CONDUIT AS SHOWN ON PLANS.
15. ALL EXTERIOR PULL BOXES AND JUNCTION BOXES SHALL BE NEMA 4X.
16. ALL ELECTRICAL AND EXTERIOR CONNECTIONS SHALL BE WEATHERPROOF.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ANY EXISTING CONDUIT AND/OR JUNCTION BOXES TO BE USED ON THIS CONTRACT PRIOR TO PULLING NEW CABLE THROUGH. ANY DAMAGE TO NEW OR EXISTING CABLE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.

LEGEND:

- CHANGEABLE MESSAGE SIGN
- EXISTING CONDUIT
- EXISTING CONDUIT WITH NEW CABLE
- NEW CONDUIT
- JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW CMS CABINET (P)
- CONDUIT IN
- CONDUIT OUT
- X-Y LANE X TO LANE Y CABLES
- TERMINAL BLOCK
- FO NEW FIBER OPTIC CABLE
- EXISTING TRAFFIC SIGNAL INDICATOR
- QUAD RECEPTICAL
- DUPLEX RECEPTICAL
- S NEW INDICATOR LIGHT SWITCH CONSOLE PANEL
- RISER CONDUITS
- DROP CONDUITS
- NEW LED INDICATOR BOX
- NEW CMS WORKSTATION
- 2 NEW TYPE 2 EQUIPMENT RACK

ABBREVIATIONS:

AM	AMBER
BK	BLACK
BL	BLUE
BN	BROWN
C	CONDUIT
CAB	CABINET
CEC	CALIFORNIA ELECTRICAL CODE
CMS	CHANGEABLE MESSAGE SIGN
COMM	COMMUNICATIONS
CPB	COMMUNICATIONS PULL BOX
CKT	CIRCUIT
E	EXISTING
ETC	ELECTRONIC TOLL COLLECTION
FDU	FIBER DISTRIBUTION UNIT
FO	FIBER OPTIC
GFI	GROUND FAULT INTERRUPT
GN	GREEN
ILB	INDICATOR LIGHT BOOTH
ILC	INDICATOR LIGHT CANOPY
ILP	INDICATOR LIGHT PANEL
J-BOX	JUNCTION BOX
JB	JUNCTION BOX
KVA	KILO-VOLT AMPERE
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT EMITTING DIODE
MLO	MAIN LUG ONLY
NEC	NATIONAL ELECTRICAL CODE
N	NEUTRAL (GROUNDED CONDUCTOR)
ORT	OPEN ROAD TOLLING
PB	CEILING/WALL MOUNTED PULL BOX
PCC	PORTLAND CEMENT CONCRETE
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
RMC	RIGID METAL CONDUIT
R#	RELAY (# = RELAY NUMBER)
RD	RED
SS	STAINLESS STEEL
TEES	TRANSPORTATION ELECTRICAL EQUIPMENT
SM	SINGLE MODE
TB	TERMINAL BLOCKS
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYPE A CABLE	36 SINGLE MODE FIBER OPTIC CABLE
TYPE D CABLE	12 SINGLE MODE FIBER OPTIC CABLE
TYPE 1 CONDUIT	GALVANIZED RIGID STEEL (GRS)
TYPE 2 CONDUIT	TYPE 1 CONDUIT COATED WITH PVC OR POLYETHYLENE
TYPE 4 CONDUIT	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
UPS	UNINTERRUPTIBLE POWER SUPPLY
XFMR	TRANSFORMER
YL	YELLOW

INDEX:

STANDARD NOTES:

- BC INSTALL PULL BOX IN EXISTING CONDUIT RUN.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- SC SPLICE NEW TO EXISTING CONDUCTORS.
- AB ABANDONED
- RD REMOVE AND DISPOSE
- RS REMOVE AND SALVAGE

WIRING DIAGRAM LEGEND:

- CB CIRCUIT BREAKER
- NB NEUTRAL BUS
- GB GROUND BUS
- ENCLOSURE BOND
- GROUNDING ELECTRODE
- CIRCUIT BREAKER
- R RECEPTACLE

GENERAL NOTES, LEGEND, ABBREVIATIONS AND INDEX OF DRAWINGS (ANTIOCH BRIDGE)

E-1

SHEET	OF
1	16

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY | CONSULTANT FUNCTIONAL SUPERVISOR | STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

DATE PLOTTED => $DATE
TIME PLOTTED => $TIME
LAST REVISION 00-00-00
$FREQUEST

BORDER LAST REVISED 2/1/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => $USER DGN FILE => $REQUEST | CU 00000 | EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	18	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

RAMSEY J. HISSEN
No. C-39608
Exp. 12/31/10
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

PROJECT NOTES:

1. INSTALL NEW TYPE D CABLE IN EXISTING CONDUIT.
2. INSTALL NEW TYPE D CABLE.
3. INSTALL NEW TYPE 1 (¾" C) CONDUIT WITH 2 #14 AND 1 #14G (120 V, CMS CABINET).
4. INSTALL ONE 15A, 1P, 120V CIRCUIT BREAKER FOR NEW CMS CABINET IN (E)SPACE #10.
5. INSTALL NEW THREE(3)15A-IP CIRCUIT BREAKERS (120 V, CMS SIGN) IN (E) SPACES 12,14, AND 16).
6. INSTALL TYPE 1 (1½" C) CONDUIT WITH 6 #12 AND 3 #12G (120 V, CMS SIGNS).
7. INSTALL TYPE 4 (1½" C) CONDUIT WITH 6 #12 AND 3 #12G (120 V, CMS SIGNS). ROUTE CONDUIT IN (E) CABLE TRAY TOGETHER WITH (E) POWER CABLES.
8. ROUTE TYPE 1 (1½" C) CONDUIT WITH 6 #12 AND 3 #12G TO (E) CANOPY (CORE DRILL IS REQUIRED). SEAL AROUND CONDUIT PENETRATION WITH FAST-SETTING EPOXY RESIN THROUGH THE DEPTH OF HOLE.
9. INSTALL NEW CAT-5e CABLE.
10. ALL WALL, CEILING AND FLOOR PENETRATIONS SHALL BE CORE-DRILLED AS DIRECTED AND APPROVED BY CALTRANS SUFFICIENTLY LARGE TO ACCOMMODATE CONDUIT PLUS FLUSH MOUNTED END BELL. ALL CORE-DRILLS SHALL BE MADE WATER-TIGHT, SEALED AROUND CONDUIT PER CALTRANS REQUIREMENTS WITH FAST-SETTING EPOXY RESIN THROUGHOUT THE DEPTH OF HOLE.
11. INSTALL NEW INDICATOR LIGHT CANOPY CABLE.
12. INSTALL NEW INDICATOR LIGHT BOOTH CABLE.
13. INSTALL NEW INDICATOR LIGHT CONSOLE CABLE.
14. INSTALL NEW CMS COMM CABLE.
15. INSTALL TYPE 3 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS.
16. INSTALL NEW TYPE 2 EQUIPMENT RACK. SEE SHEET E-3 AND SPECIFICATIONS FOR SIZE AND TYPE.
17. INSTALL NEW TYPE 4 (1½" C) CONDUIT.
18. INSTALL NEW FIBER OPTIC DUPLEX JUMPER CABLES.
19. INSTALL NEW FDU AS SPECIFIED IN CONTRACT DOCUMENT.
20. REMOVE AND DISPOSE OF EXISTING INDICATOR LIGHT CABLE.
21. INSTALL NEW CMS PANEL AS SPECIFIED IN CONTRACT DOCUMENTS.
22. INSTALL NEW CMS WORKSTATION AS SPECIFIED IN CONTRACT DOCUMENTS.
23. ROUTE NEW CABLES THROUGH EXISTING CONDUIT.
24. MODIFY EXISTING GREEN INDICATOR LIGHT AND REPLACE WITH GREEN/FLASHING AMBER LED INDICATOR BULB. REPLACE EXISTING RED INDICATOR LIGHT WITH RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.
25. INSTALL NEW TYPE 2 (1½" C) CONDUIT.
26. INSTALL NEW CMS PLAZA CABINET FOR LANES 1-3 AS SPECIFIED IN CONTRACT DOCUMENTS.
27. ROUTE NEW CMS COMM CABLE THROUGH EXISTING JUNCTION BOX.
28. NOT USED
29. INSTALL INDICATOR LIGHT SWITCH CONSOLE PANEL.
30. REMOVE EXISTING INDICATOR LIGHT SWITCH IN TOLL BOOTH.
31. INSTALL NEW CMS CONTROLLERS. ROUTE CAT-5E PATCH CABLES FROM EACH CMS CONTROLLER TO NEW ETHERNET SWITCH IN EXISTING CMS CABINET.
32. INSTALL NEW TYPE 1 (2" C) CONDUIT.
33. INSTALL NEW TYPE 2 (2" C) CONDUIT.
34. INSTALL TYPE 1 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS.
35. INSTALL NEW TYPE 1 (1½" C) CONDUIT.
36. INSTALL NEW 4"X4"X4" JUNCTION BOX
37. INSTALL INDICATOR LIGHT RELAYS AND TYPE 2 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS.
38. INSTALL NEW TYPE 4 (2" C) CONDUIT
39. INSTALL AND TERMINATE INDICATOR LIGHT CABLES TO NEW TERMINAL BLOCKS AND WIRE TO SWITCH PANEL AS SHOWN IN PLANS AND APPROVED BY THE ENGINEER.
40. INSTALL LB FITTING.
41. INSTALL NEW LED PUSH BUTTON INDICATOR BOX.
42. PROVIDE NEW REVISED (TYPED WRITTEN) PANEL SCHEDULE.
43. INSTALL NEW TYPE 4 (1½" C) CONDUIT.

PROJECT NOTES (ANTIOCH BRIDGE)

E-2

SHEET	OF
2	16

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TIME PLOTTED => $TIME
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	19	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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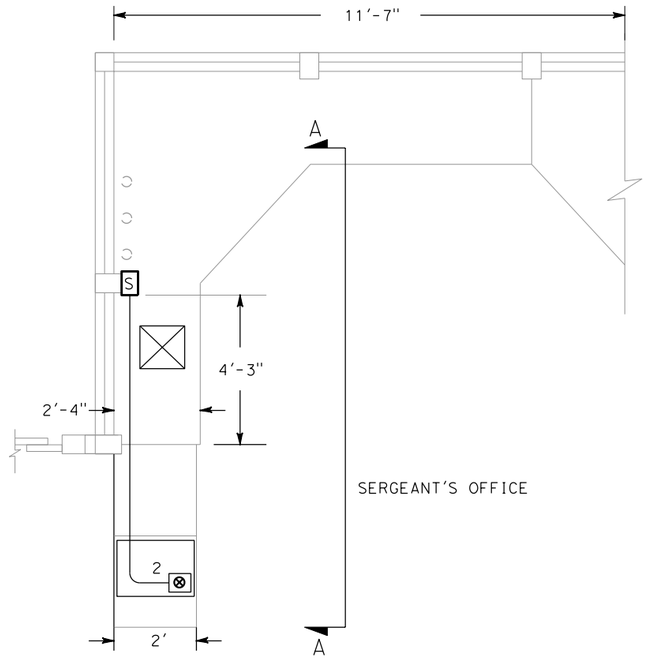
OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

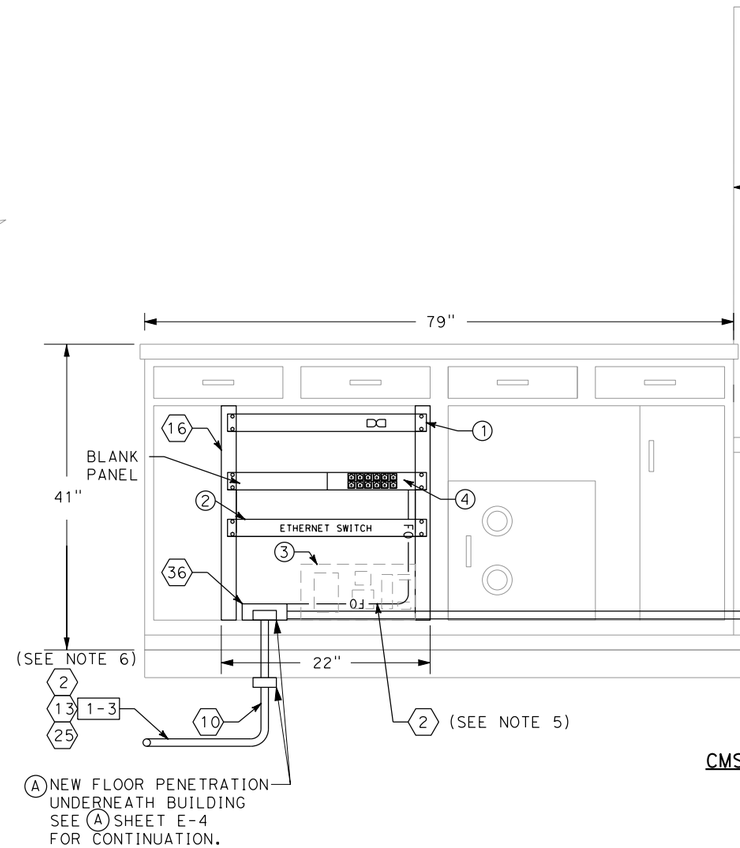
SHEET NOTES:

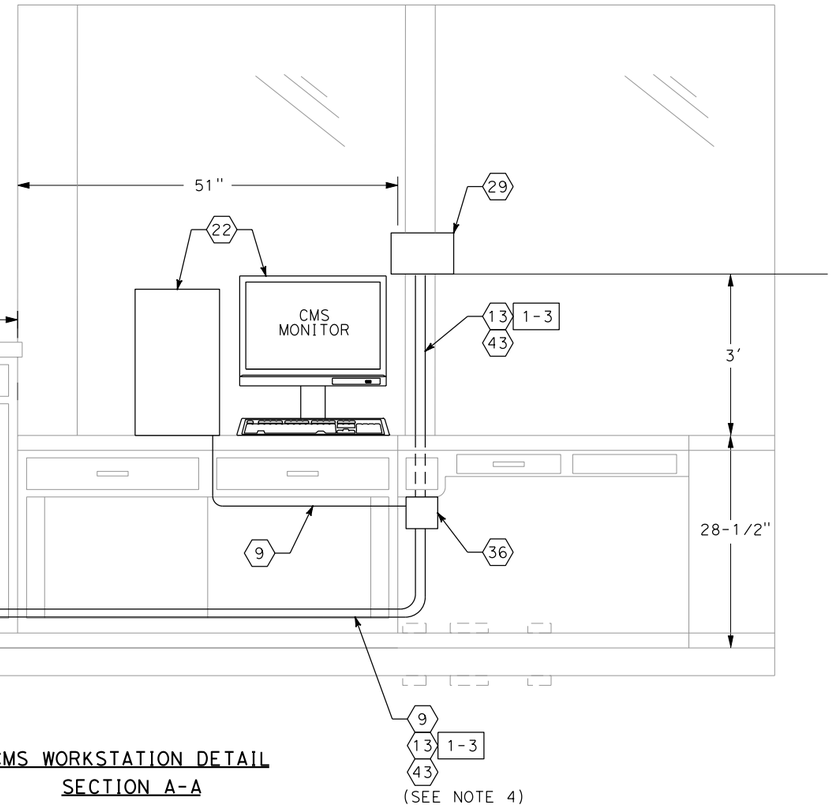
1. ANY EXISTING FURNITURE REQUIRED TO BE RE-ARRANGED FOR PLACEMENT OF CMS WORKSTATION AND INDICATOR LIGHT SWITCH CONSOLE PANEL SHALL BE COORDINATED WITH TOLL SERGEANT.
2. INDICATOR LIGHT SWITCH CONSOLE PANEL TO BE MOUNTED VERTICALLY TO EXISTING COLUMN.
3. SEE SHEET E-8 FOR CMS SYSTEM CONTROL SCHEMATIC AND SHEET E-12 FOR INDICATOR LIGHT SWITCH CONSOLE PANEL.
4. CONTRACTOR TO ROUTE ALL CABLES TO CMS WORKSTATION AND INDICATOR LIGHT SWITCH CONSOLE PANEL. SECURE ALL CONDUIT TO WALL WITH FITTINGS AND FASTENERS.
5. CONTRACTOR TO INSTALL CABLE SUPPORT SYSTEM TO NEATLY DRESS AND SECURE CABLE TO EQUIPMENT RACK.
6. CONTRACTOR TO ROUTE NEW CONDUIT UNDER BUILDING USING EXISTING CONDUIT SUPPORT SYSTEM.

ITEM	COMPONENT
1	NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP
2	NEW RACK MOUNTABLE ETHERNET SWITCH WITH MINIMUM 14-PORTS AND 2 FIBER PORTS
3	(E) RACK AND (E) 170 CONTROLLER TO BE REMOVED
4	NEW PATCH PANEL



MAIN FLOOR - PARTIAL FLOOR PLAN VIEW





CMS WORKSTATION DETAIL
SECTION A-A

TOLL PLAZA OPERATIONS BUILDING
PARTIAL MAIN FLOOR PLAN
CONDUIT ROUTING
(ANTIOCH BRIDGE)

NO SCALE

E-3

SHEET	OF
3	16

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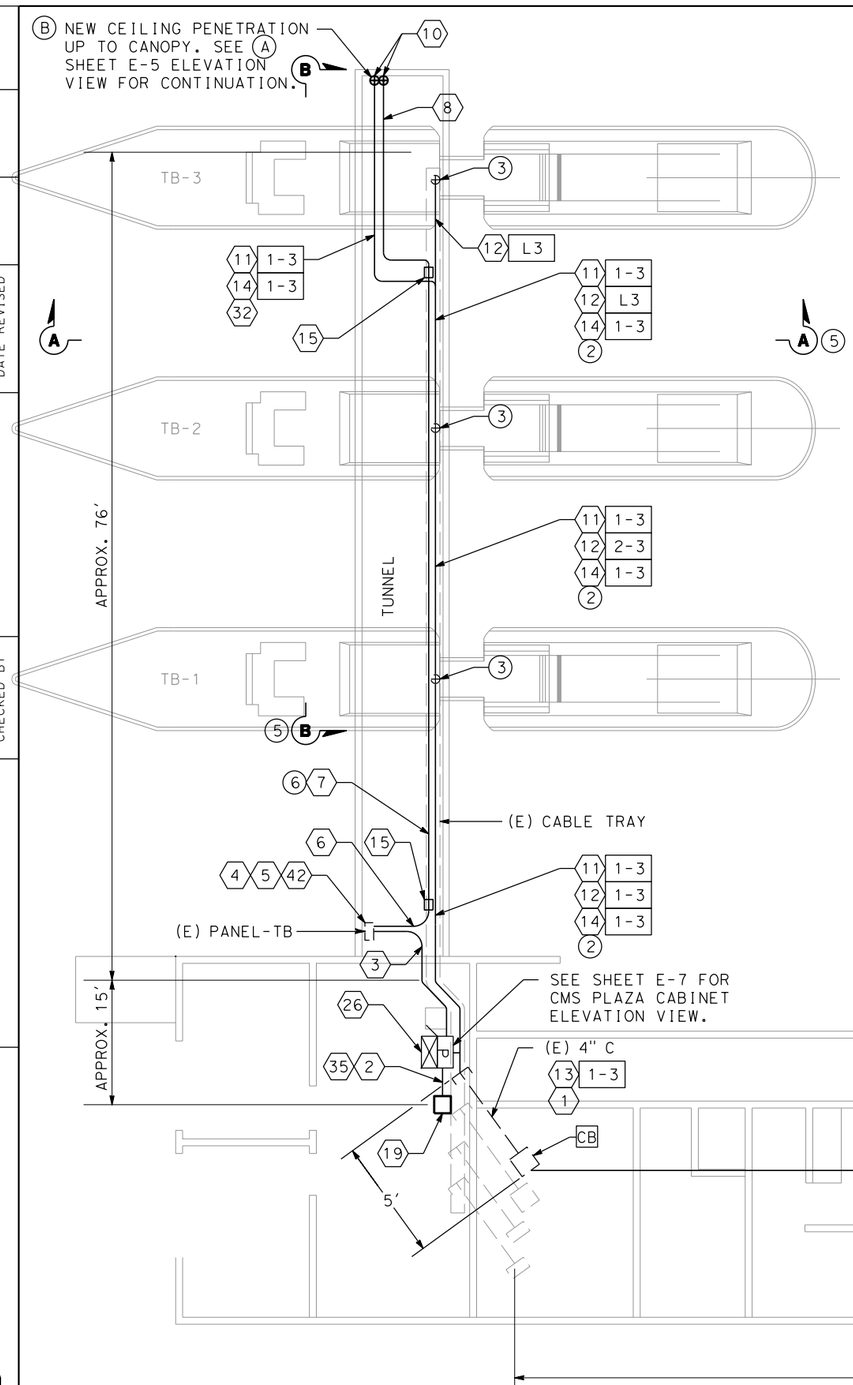

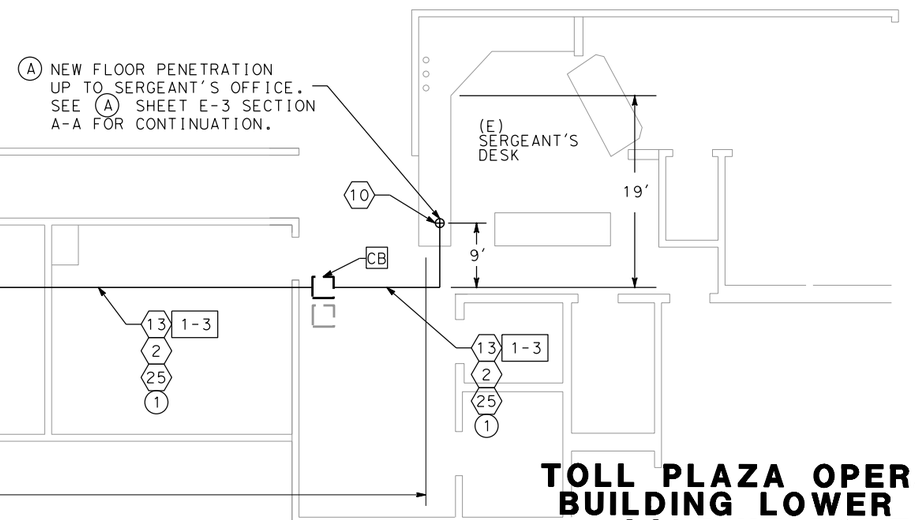

LOWER LEVEL FLOOR PLAN
(UNDERNEATH BUILDING CONDUIT ROUTING)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	20	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

NOTES:

1. CONTRACTOR TO ROUTE NEW CONDUIT UNDER BUILDING USING EXISTING CONDUIT SUPPORT SYSTEM.
2. ROUTE CMS COMM AND INDICATOR LIGHT CABLES ON EXISTING CABLE TRAY TOGETHER WITH EXISTING COMMUNICATION CABLES.
3. ROUTE NEW INDICATOR LIGHT BOOTH CABLE UP THROUGH EXISTING CONDUIT. SEE SHEET E-6 SECTION B-B FOR MORE DETAILS.
4. ROUTE POWER CABLES ON EXISTING CABLE TRAY TOGETHER WITH EXISTING POWER CABLES.
5. SEE CONDUIT ROUTING DETAILS SHEET E-6 FOR SECTION A-A AND B-B DETAILS.
6. TRANSITION FROM TYPE 1 TO TYPE 4 CONDUIT. PROVIDE ALL CONDUIT FITTINGS AND FASTENERS TO SECURE CONDUIT ON CABLE TRAY.

TOLL PLAZA OPERATIONS BUILDING LOWER LEVEL CONDUIT ROUTING (ANTIOCH BRIDGE)

NO SCALE

E-4

SHEET	OF
4	16

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RETENTIVE PLANS ARE ACCURATE FOR ELECTRICAL WORK ONLY
IF THIS BAR IS NOT 3" THEN SCALE IS IN INCHES
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	21	123

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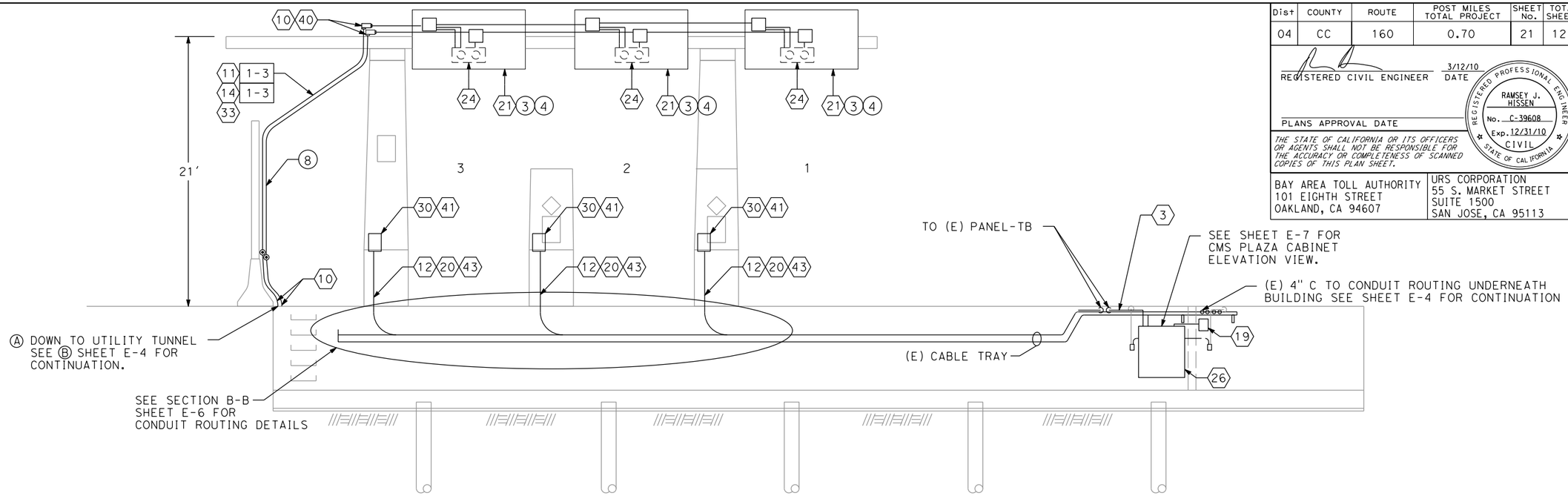
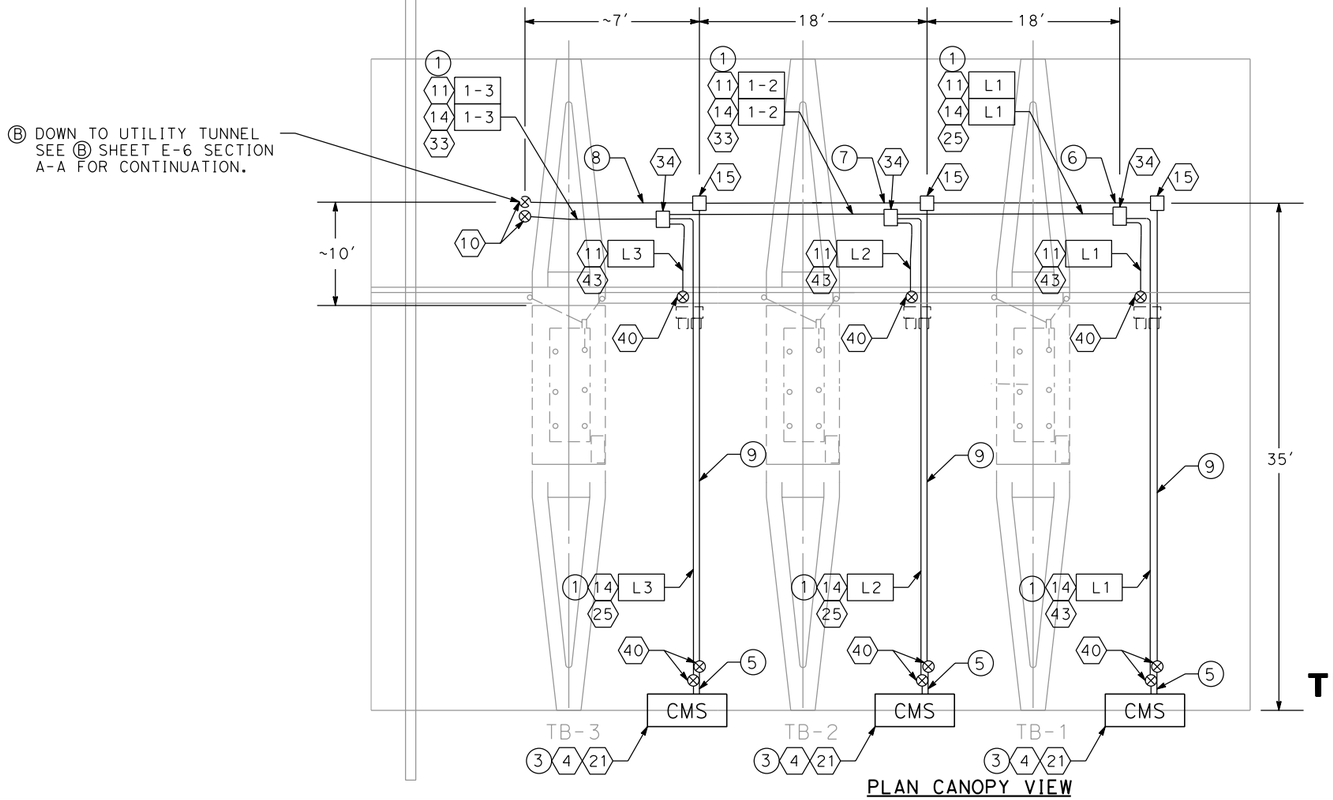


ELEVATION VIEW



PLAN CANOPY VIEW

NOTES:

1. CONTRACTOR TO PROVIDE CONDUIT SUPPORT.
2. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.
3. REMOVE AND SALVAGE EXISTING STATIC SIGNS IN LANES 1-3 AND INSTALL NEW CMS PANELS.
4. SEE S-1, S-2, AND S-3 SHEETS FOR CMS PANEL MOUNTING TO CANOPY DETAILS.
5. INSTALL TYPE 4 (1" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS SIGN POWER).
6. INSTALL TYPE 2 (1½" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS SIGN POWER).
7. INSTALL TYPE 2 (1½" C) CONDUIT WITH 4 #12 & 2 #12G (120V, CMS SIGN POWER).
8. INSTALL TYPE 2 (1½" C) CONDUIT WITH 6 #12 & 3 #12G (120V, CMS SIGN POWER).
9. INSTALL TYPE 2 (1" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS SIGN POWER). PROVIDE CONDUIT SUPPORT EVERY 5 FEET (MAX).

TOLL PLAZA OPERATIONS BUILDING TUNNEL TO CONOPY CONDUIT ROUTING (ANTIOCH BRIDGE)

NO SCALE

E-5

SHEET	OF
5	16

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	22	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

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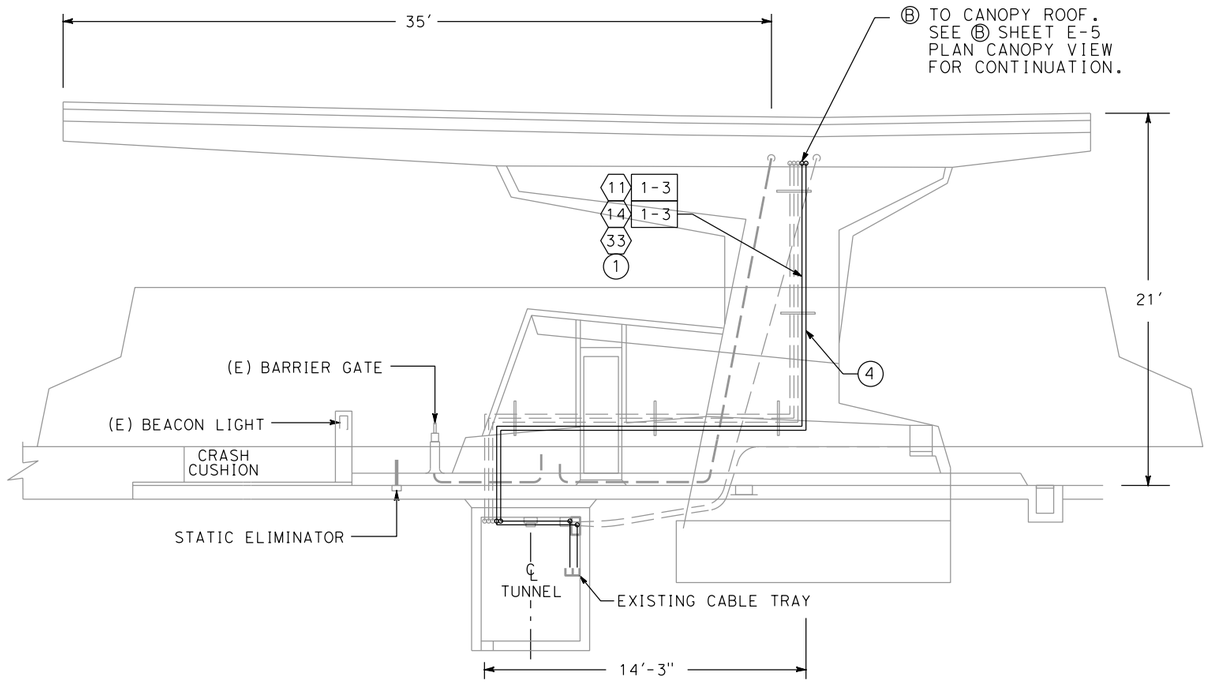
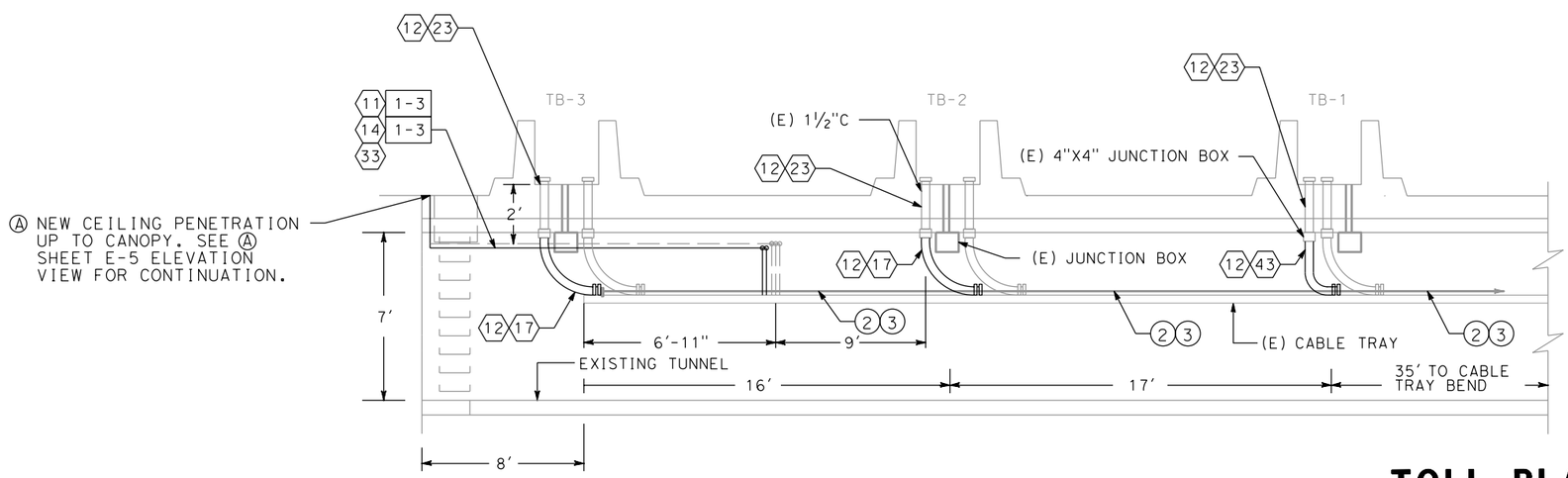


SECTION A-A



SECTION B-B

NOTES:

1. CONTRACTOR TO ATTACH NEW CONDUIT TO EXISTING CHANNEL STRUTS.
2. ROUTE CMS COMM AND INDICATOR LIGHT CABLES ON EXISTING CABLE TRAY TOGETHER WITH EXISTING COMMUNICATION CABLES.
3. ROUTE POWER CABLES ON EXISTING CABLE TRAY TOGETHER WITH EXISTING POWER CABLES.
4. INSTALL TYPE 2 (1 1/2" C) CONDUIT WITH 6#12 & 3#12G (120V, CMS SIGN POWER)

TOLL PLAZA OPERATIONS BUILDING CONDUIT ROUTING DETAILS (ANTIOCH BRIDGE)

NO SCALE

E-6

SHEET	OF
6	16

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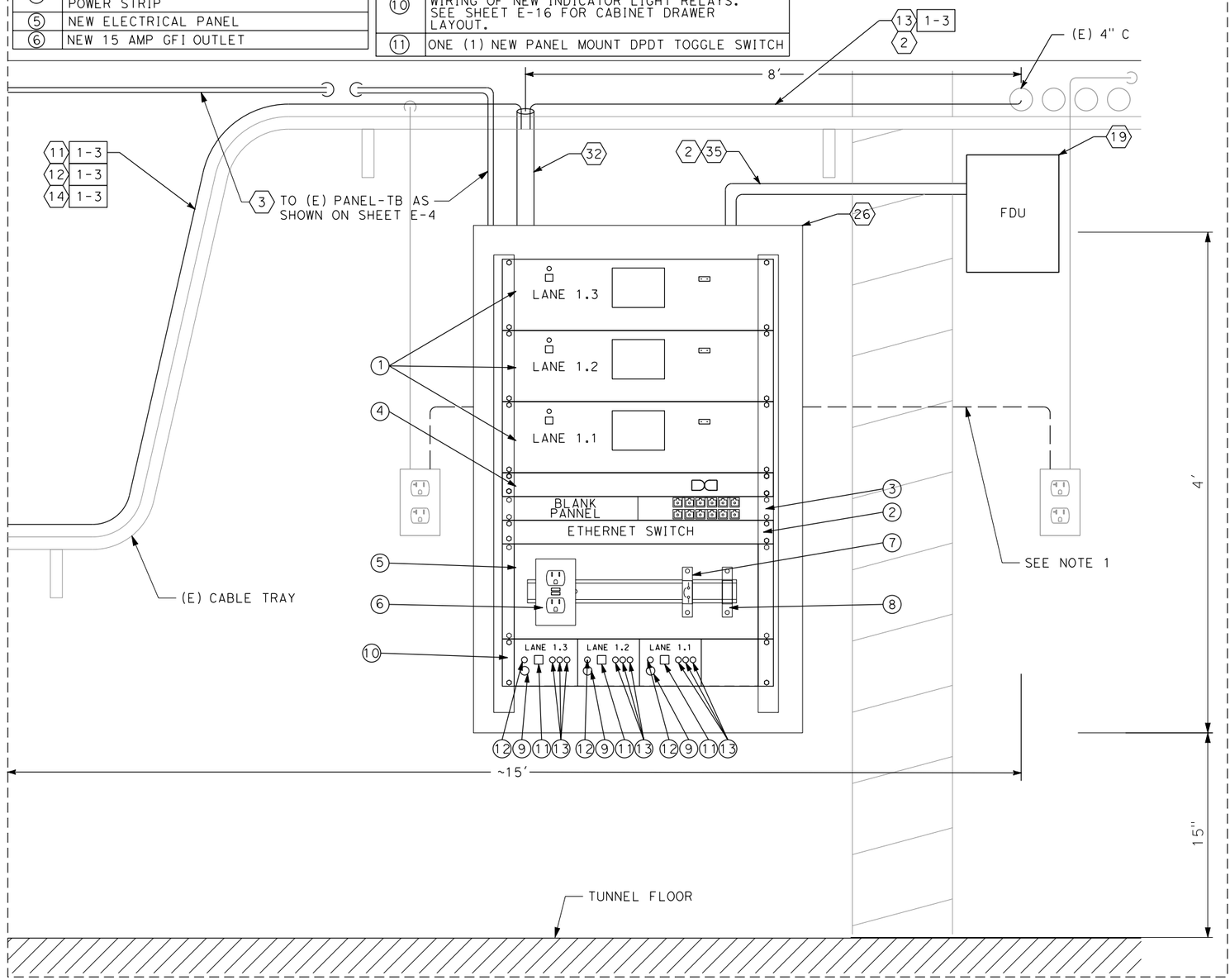
ITEM	COMPONENT
1	NEW CMS CONTROLLER
2	NEW 14-PORT + 2 FIBER PORT ETHERNET SWITCH (RACK MOUNTED)
3	NEW 12-PORT FIBER PATCH (CONNECTOR) PANEL (X2)
4	NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP
5	NEW ELECTRICAL PANEL
6	NEW 15 AMP GFI OUTLET

ITEM	COMPONENT
7	ONE (1) NEW 2 AMP BREAKER (120 VAC)
8	ONE (1) NEW NEC CLASS 3, 100 WATT 1:1, 120 VAC TRANSFORMER
9	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
10	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS. SEE SHEET E-16 FOR CABINET DRAWER LAYOUT.
11	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH

ITEM	COMPONENT
12	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION
13	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)



CMS PLAZA CABINET ELEVATION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	23	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

SHEET NOTES:

1. EXISTING CONDUIT TO BE RE-ROUTED FOR PLACEMENT OF CMS PLAZA CABINET. CONTRACTOR SHALL COORDINATE WITH LIEUTENANT.
2. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
3. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS (I.E., TRANSFORMERS, BREAKERS, ETC.).
4. ALL CMS CABINET EQUIPMENT AND CONDUIT LOCATIONS SHOWN ON PLANS AND DETAILS ARE APPROXIMATE. FINAL LOCATION OF ALL EQUIPMENT AND MATERIALS SHALL BE AS DIRECTED AND APPROVED BY THE ENGINEER.
5. CMS CABINET MOUNTED TO A CONCRETE WALL SHALL BE ATTACHED TO THE WALL USING 3/8" DIAMETER EXPANSION ANCHORS, TOTAL 4 PER CABINET ATTACHED TO THE CONCRETE WALL. CONTRACTOR MAY PROPOSE AN ALTERNATIVE MOUNTING METHOD (I.E., MOUNTING RAILS) FOR APPROVAL BY ENGINEER.
6. CABINET AND EQUIPMENT TO MEET CALTRANS TEES REQUIREMENTS.
7. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.
8. CONTRACTOR TO LEAVE ONE (1) RACK UNIT OF SPACE AT BOTTOM OF CABINET.

CMS PLAZA CABINET ELEVATION VIEW FOR LANES 1-3 (ANTIOCH BRIDGE)

NO SCALE

E-7

SHEET	OF
7	16

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	24	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

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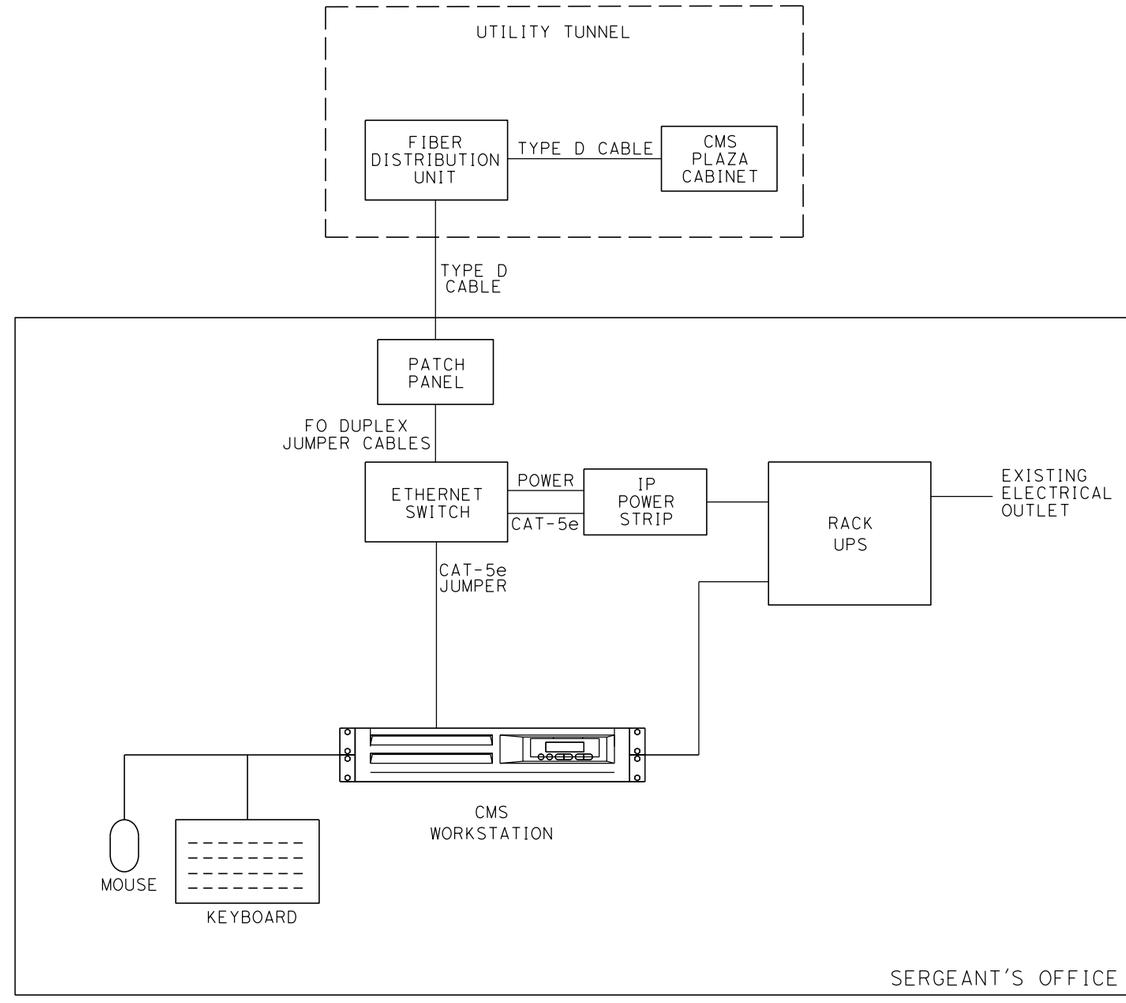
NOTES:

1. SEE SHEETS E-9 TO E-10 FOR SPLICING AND INTERCONNECTION DETAILS.
2. SEE CMS WORKSTATION DETAIL SHEET E-3.
3. SEE SHEET E-7 FOR CMS PLAZA CABINET ELEVATION VIEW.



TOLL PLAZA OPERATIONS BUILDING

CMS SYSTEM CENTRAL CONTROL SCHEMATIC (ANTIOCH BRIDGE)

NO SCALE

E-8

SHEET	OF
8	16

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	25	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

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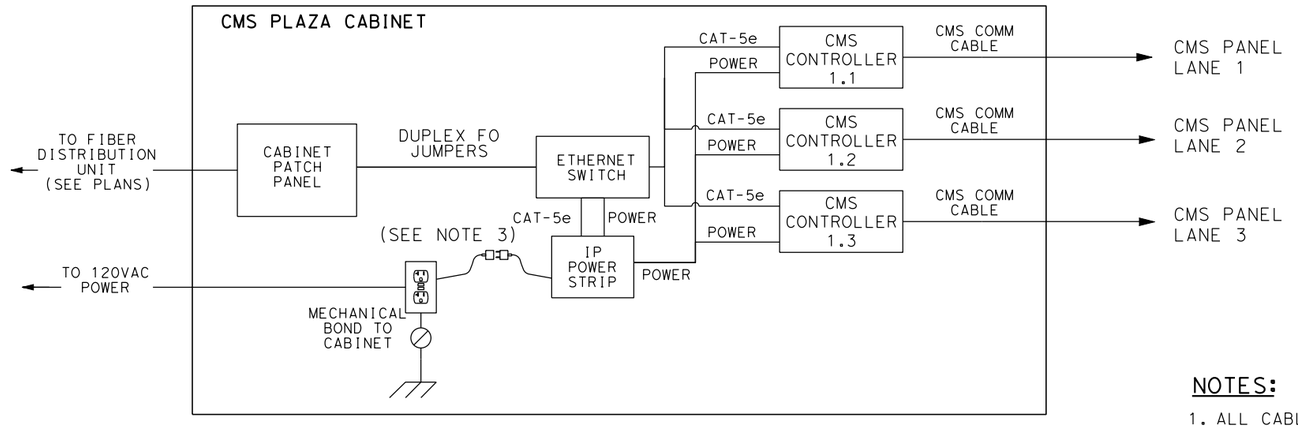
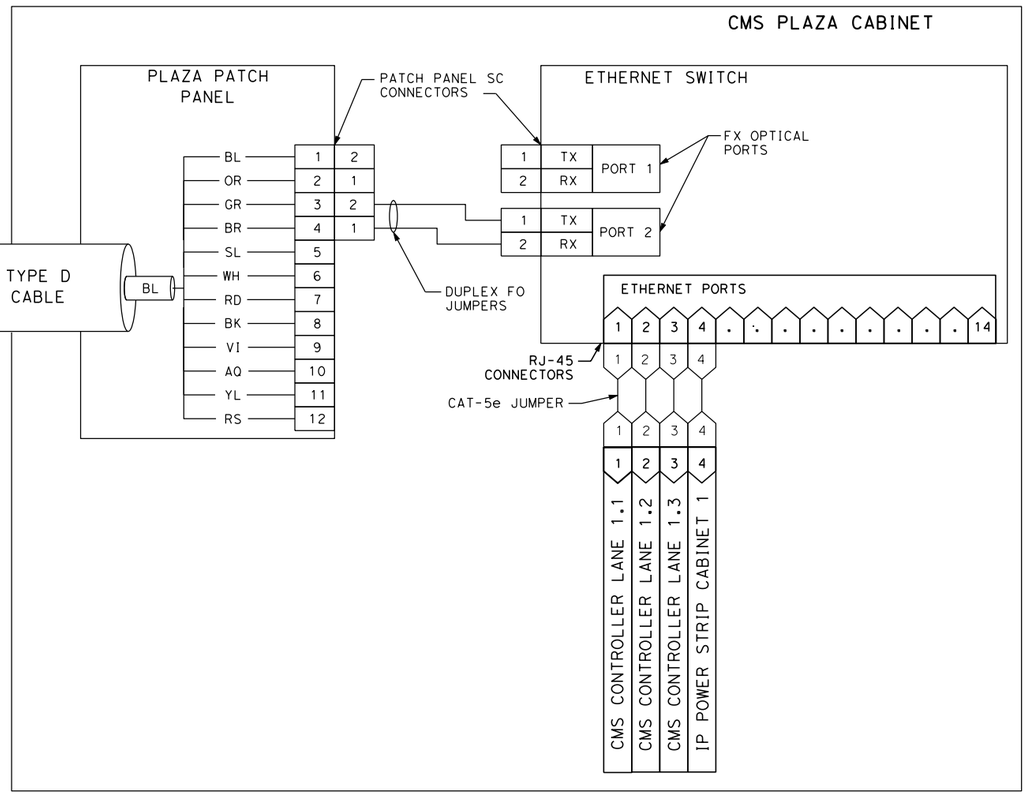


NOTES:

1. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
2. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS (I.E., TRANSFORMERS, BREAKERS, ETC.)
3. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.



CMS PLAZA CABINET WIRING SCHEMATIC (ANTIOCH BRIDGE)

NO SCALE

E-9

SHEET	OF
9	16

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	26	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

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TYPE D CABLE TO CMS PLAZA CABINET

FIBER No.	PLAZA PATCH PANEL	PLAZA CABINET			FIBER No.	REMARKS
1-2	O>			<O	1-2	FUTURE
3	X>	<X>	<X>	<X	3	ETHERNET TX PRIMARY
4	X>	<X>	<X>	<X	4	ETHERNET RX PRIMARY
5-12	O>	<O>	<O>	<O	5-12	FUTURE

TYPE D CABLE TO CMS WORKSTATION

FIBER No.	PLAZA PATCH PANEL	PLAZA CABINET			FIBER No.	REMARKS
1-2	O>			<O	1-2	FUTURE
3	X>	<X>	<X>	<X	3	ETHERNET TX PRIMARY
4	X>	<X>	<X>	<X	4	ETHERNET RX PRIMARY
5-12	O>	<O>	<O>	<O	5-12	FUTURE

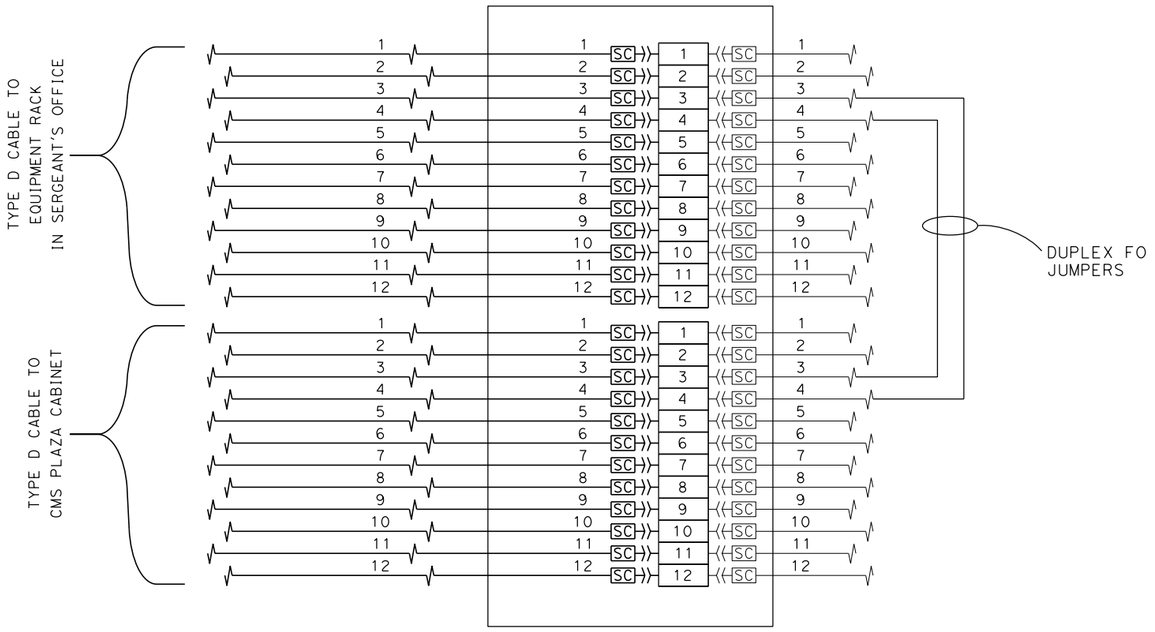
NOTES:

X - TERMINATED ACTIVE

O - TERMINATED SPARE

< > - ARROW POINTS TO THE DIRECTION OF TRANSMISSION

▶ - TERMINATED FIBERS (SC CONNECTOR)



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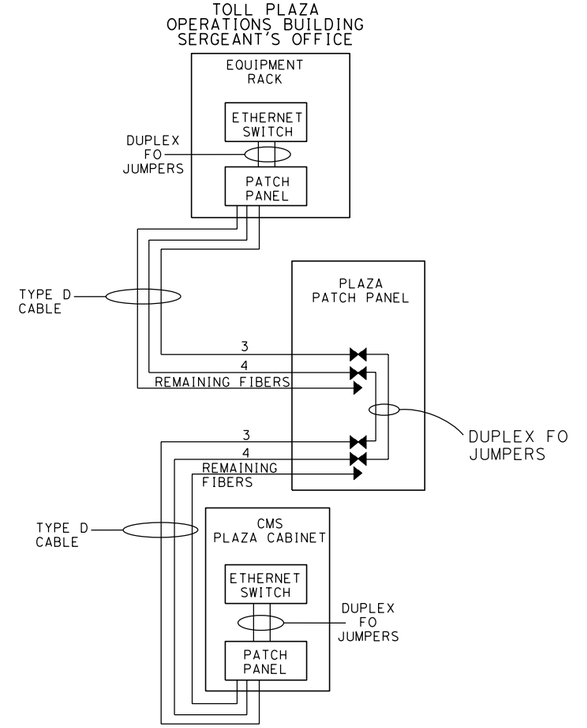

TYPE D CABLE FIBER ASSIGNMENT (ANTIOCH BRIDGE)

NO SCALE

E-10

SHEET	OF
10	16

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	27	123

Carol Light
REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — CAROL LIGHT No. 10145 Exp. 09/30/11 ELECTRICAL — STATE OF CALIFORNIA

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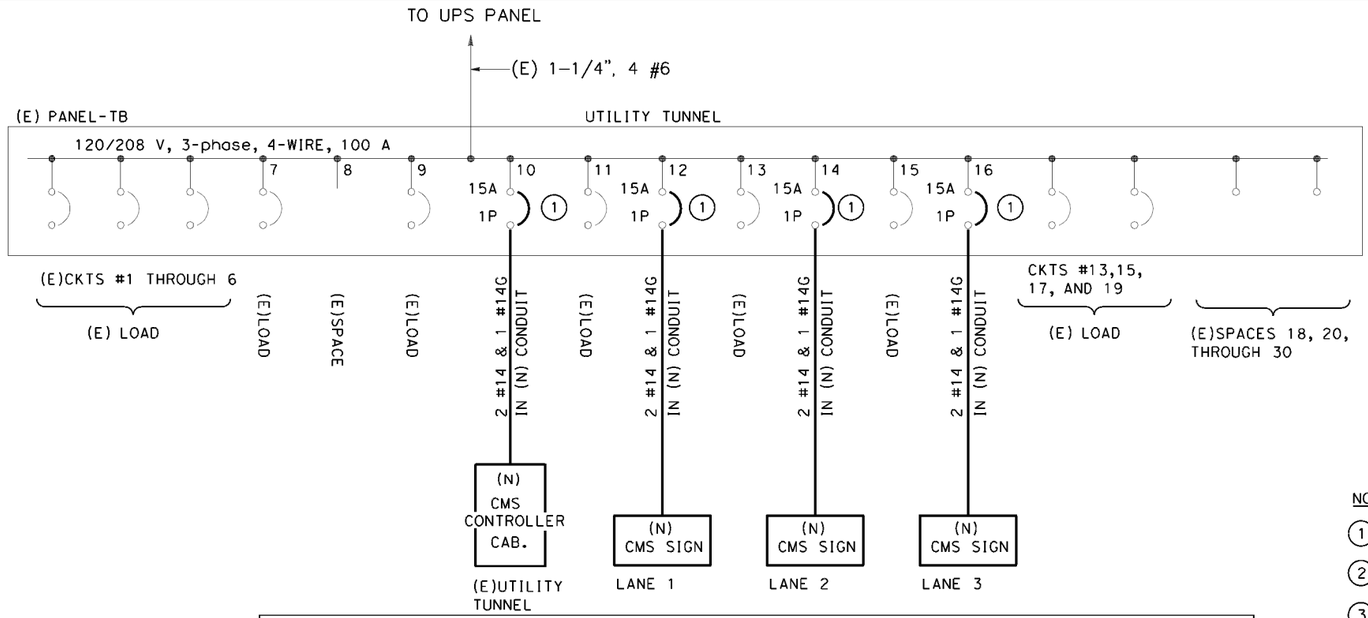

PROJECT: BATA TO12 TOLL PLAZAS CMS INITIALIZATION

(E) PANEL- TB

LOCATION: ANTIOCH BRIDGE
SERVICE: UTILITY TUNNEL

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(E) LANE 1- BOOTH EQPT				20	1	1	A	2	20	1				(E) CAMERA LANE 1
(E) LANE 1- ENT. LT. CURTAIN				20	1	3	B	4	20	1				(E) CAMERA LANE 2
(E) LANE 1- ENT. LT. CURTAIN				20	1	5	C	6	20	1				(E) CAMERA LANE 3
(E) LANE 2- BOOTH EQPT				20	1	7	A	8	20	1				(E) SPACE
(E) LANE 2- ENTRANCE LT. CURTAIN				20	1	9	B	10	15	1			0.60	(N) CMS CABINET- TUNNEL
(E) LANE 2- EXIT LT. CURTAIN				20	1	11	C	12	15	1			0.50	(N) CMS SIGN- LANE 1
(E) LANE 3- BOOTH EQPT				20	1	13	A	14	15	1			0.50	(N) CMS SIGN- LANE 2
(E) LANE 3- ENTRANCE LT. CURTAIN				20	1	15	B	16	15	1			0.50	(N) CMS SIGN- LANE 3
(E) LANE 3- EXIT LT. CURTAIN				20	1	17	C	18		1				(E) SPACE
(E) LIGHT SENSORS ON LANE 2				20	1	19	A	20		1				(E) SPACE
(E) SPACE					1	21	B	22		1				(E) SPACE
(E) SPACE					1	23	C	24		1				(E) SPACE
(E) SPACE					1	25	A	26		1				(E) SPACE
(E) SPACE					1	27	B	28		1				(E) SPACE
(E) SPACE					1	29	C	30		1				(E) SPACE
TOTALS SECTION 1	**0.00**	**0.00**	**0.00**								**0.00**	**0.00**	**2.10**	

VOLTAGE: 120/208V	**LOAD SUMMARY**		
PHASE/WIRE: 3 PHASE / 4 WIRE	**CONNECT LOAD**	**DEMAND FACTOR**	**DEMAND LOAD**
RATING: 100A	**0.00**	125% OF LOAD NEC 220-13	**0.00**
MAINS: MAIN LUG ONLY	**0.00**		**0.00**
MOUNTING: SURFACE	**2.10**	**1.00**	**2.10**
A.I.C.:	**2.10 KVA**		**2.10 KVA**
BUS SIZE:	**5.8 AMPS**		**5.8 AMPS**

BALANCE:	(KVA)	%	AMPS:
PHASE A:	0.50	23.81	1.39
PHASE B:	1.10	52.38	3.06
PHASE C:	0.50	23.81	1.39

ADDITIONAL FEATURES:

S&L JOB #:

NOTES:

1. INSTALL NEW CIRCUIT BREAKER IN EXISTING SPACE.
2. CONTRACTOR TO UPDATE BREAKER PANEL BOARD SCHEDULE AND PROVIDE A NEW TYPED WRITTEN PANEL BOARD SCHEDULE.
3. THE CMS CABINET AND SIGNS SHALL BE CONNECTED TO THE BUILDING GROUNDING SYSTEM BY THE EQUIPMENT GROUND CONDUCTOR IN EACH CONDUIT.
4. ALL METAL PARTS OF THE ELECTRICAL SYSTEM SHALL BE BONDED TOGETHER PER CONTRACT SPECIFICATIONS.

PARTIAL ONE LINE DIAGRAM AND PANEL SCHEDULE (ANTIOCH BRIDGE)

NO SCALE

E-11

SHEET	OF
11	16

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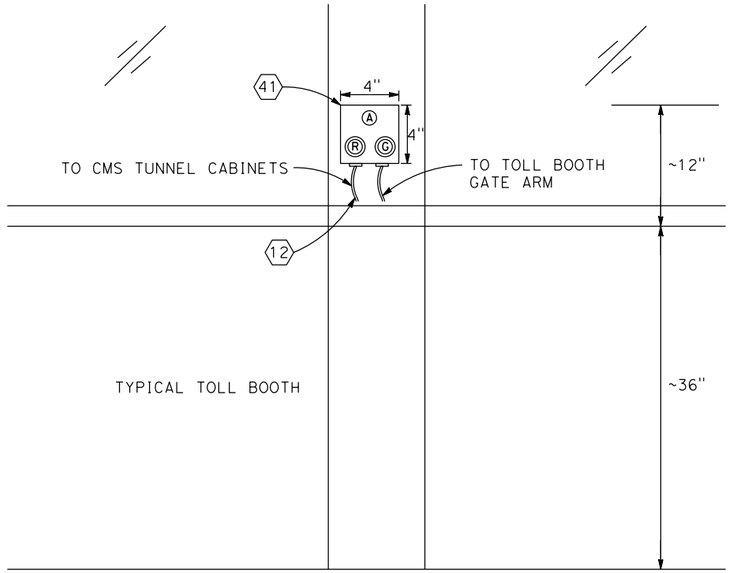
NOTES:

1. SIZE OF CONSOLE SWITCH PANEL WILL BE FIELD DETERMINED BY CONTRACTOR TO ACCOMMODATE NUMBER OF LANES.
2. SEE SHEET E-3 FOR LOCATION OF SWITCH CONSOLE PANEL.
3. SEE SHEET E-13 FOR PROPOSED WIRING CONFIGURATION.
4. CONTRACTOR TO LABEL PUSH BUTTON SWITCH WITH R, G, AND A LETTERS FOR RED, GREEN, AND AMBER LANE INDICATION.



NEW TOLL BOOTH INDICATOR LIGHT SWITCH BOX

LEGEND

- (R) PANEL MOUNT MOMENTARY RED LED ILLUMINATED PUSH BUTTON SWITCH
- (G) PANEL MOUNT MOMENTARY GREEN LED ILLUMINATED PUSH BUTTON SWITCH
- (A) PANEL MOUNT MOMENTARY AMBER LED ILLUMINATED PUSH BUTTON SWITCH
- (A) AMBER INDICATOR LED LIGHT

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160	0.70	28	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

RAMSEY J. HISSEN, No. C-39608, Exp. 12/31/10, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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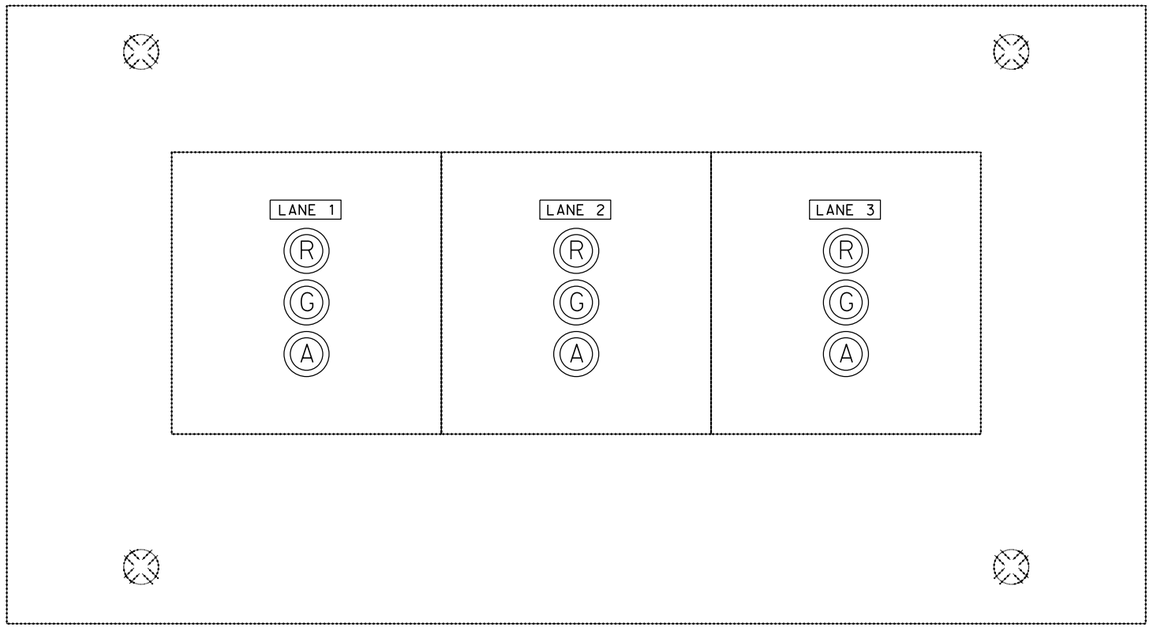

NEW INDICATOR LIGHT SWITCH CONSOLE PANEL

INDICATOR LIGHT SWITCH CONSOLE PANEL AND TOLL BOOTH INDICATOR SWITCH BOX (ANTIOCH BRIDGE)

NO SCALE

E-12

SHEET	OF
12	16

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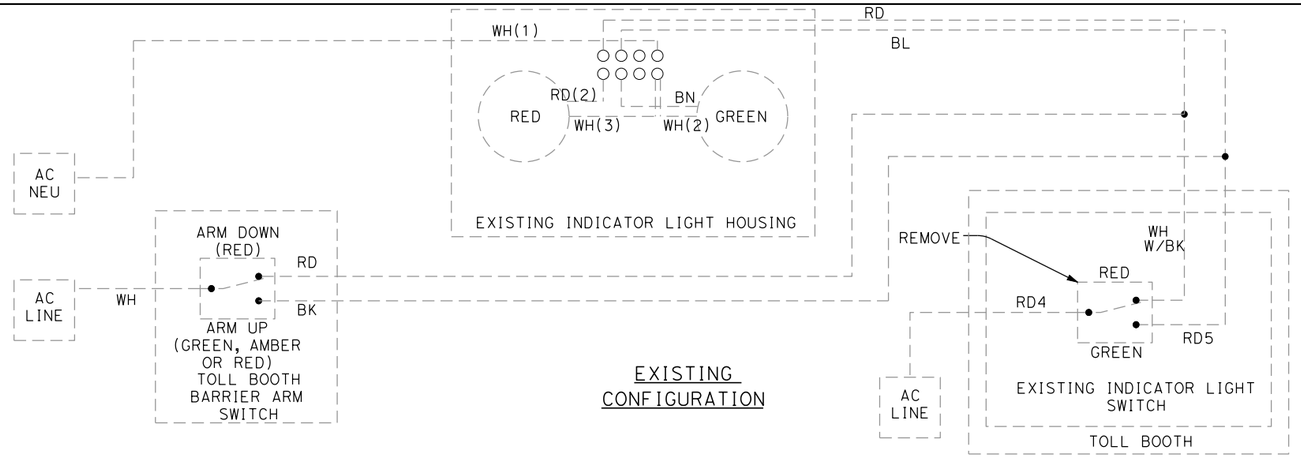
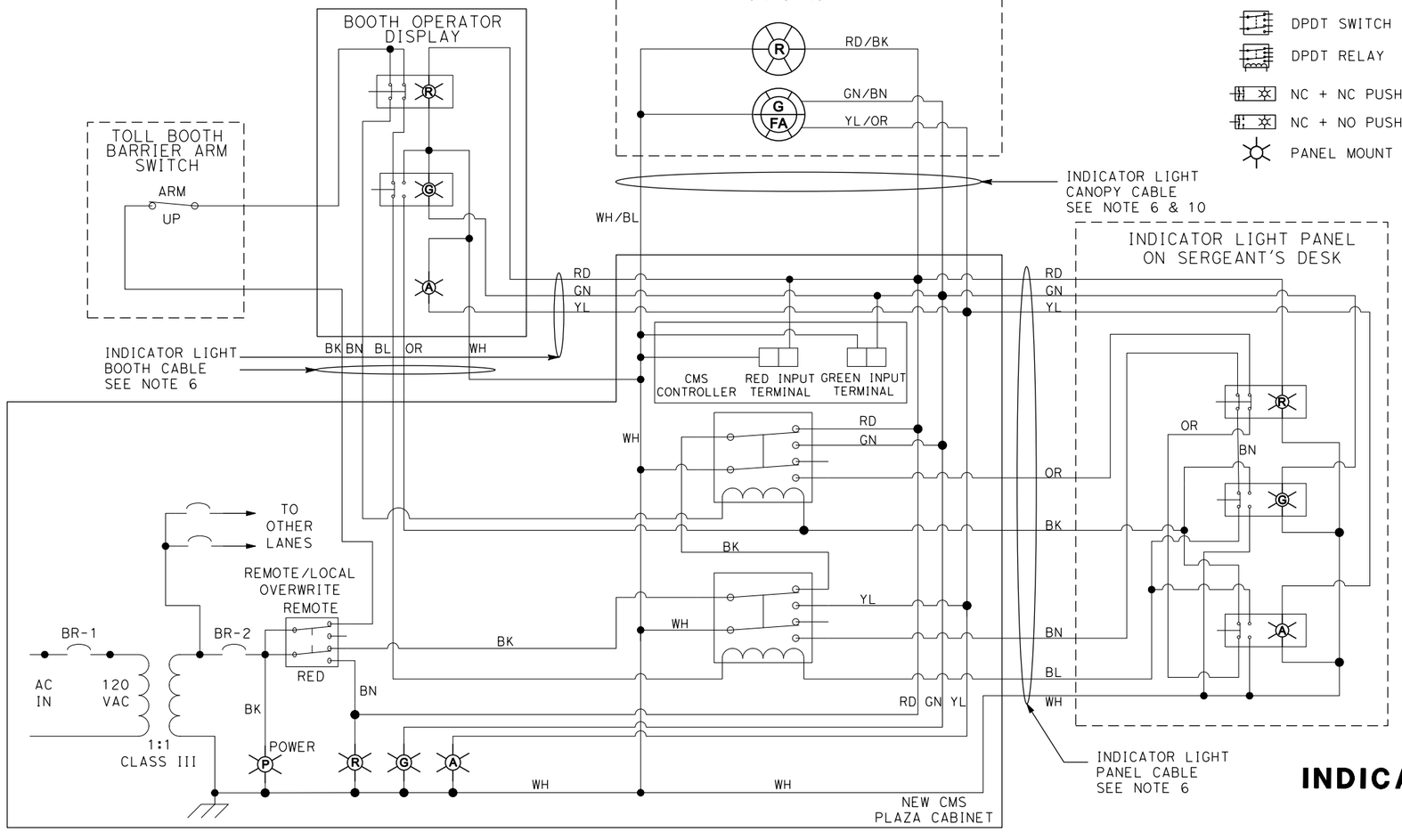


EXISTING CONFIGURATION

LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 ½ AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 7)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)



PROPOSED CONFIGURATION

NOTES:

1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-12 FOR INDICATOR LIGHT SWITCH CONSOLE PANEL DETAIL.
3. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP. ONE TRANSFORMER PER CMS CABINET.
4. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
5. BELDEN 5506UE OR APPROVED EQUIVALENT.
6. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
7. ONE (1) ½ AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) ½ AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
8. INTERCEPT EXISTING GATE ARM CABLE IN TOLL BOOTH.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 INDICATOR LIGHT CONTROL LANES.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHTS ON CANOPY.

INDICATOR LIGHT WIRING DIAGRAM FOR LANES 1-3 (ANTIOCH BRIDGE)

NO SCALE

E-13

SHEET	OF
13	16

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REGISTERED CIVIL ENGINEER — DATE 3/12/10

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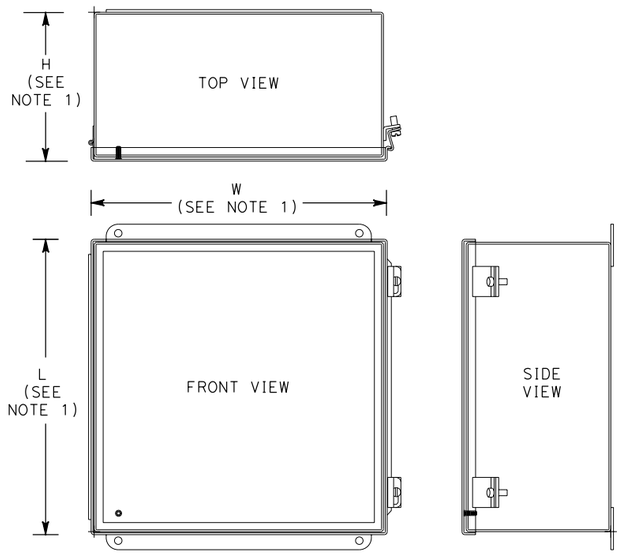
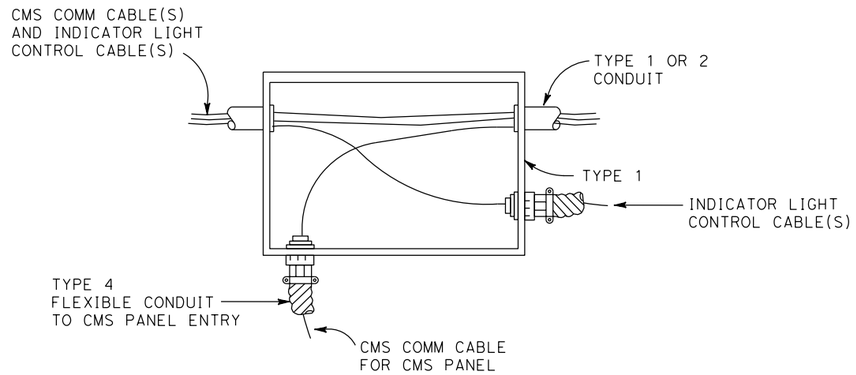
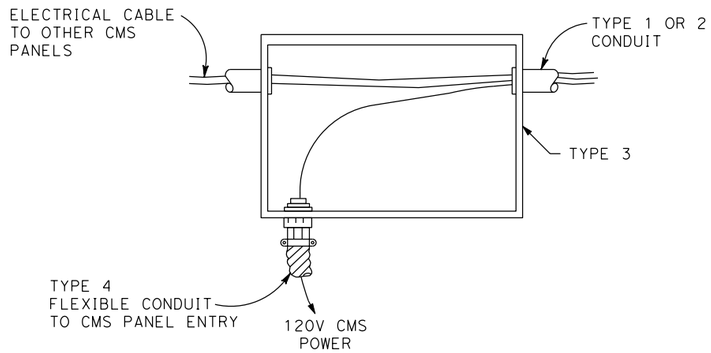


NEMA 4X JUNCTION BOX
(SHOWN WITH HINGE)





NOTES:

1. TYPE 1 NEMA 4X JUNCTION BOX (12"L X 12"W X 6"D, TYP.) OR AS REQ'D.
   TYPE 3 NEMA 4X JUNCTION BOX (5"L X 6"W X 4"D, TYP.) OR AS REQ'D.
2. MINIMUM SIZES OF JUNCTION BOXES SHOWN. CONTRACTOR SHALL CONFIRM SIZES AND QUANTITIES IN FIELD AND SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.
3. FOR JUNCTION BOX MOUNTED ON EXISTING CONCRETE WALLS OR SURFACE FLOOR MOUNTED USE ⅜" EXPANSION ANCHORS, TOTAL OF 4 FOR EACH BOX.
4. COIL A MINIMUM OF 3' OF CABLE FOR EACH DEVICE IN THE TYPE 1 AND TYPE 2 JUNCTION BOXES.
5. SEE SHEET E-13 FOR INDICATOR LIGHT WIRING.

JUNCTION BOX DETAILS (ANTIOCH BRIDGE)

NO SCALE

E-14

SHEET	OF
14	16

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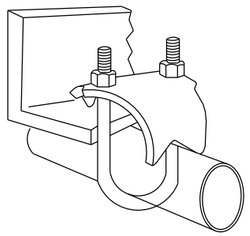
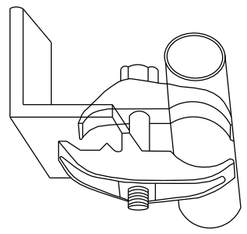
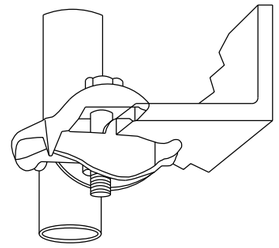


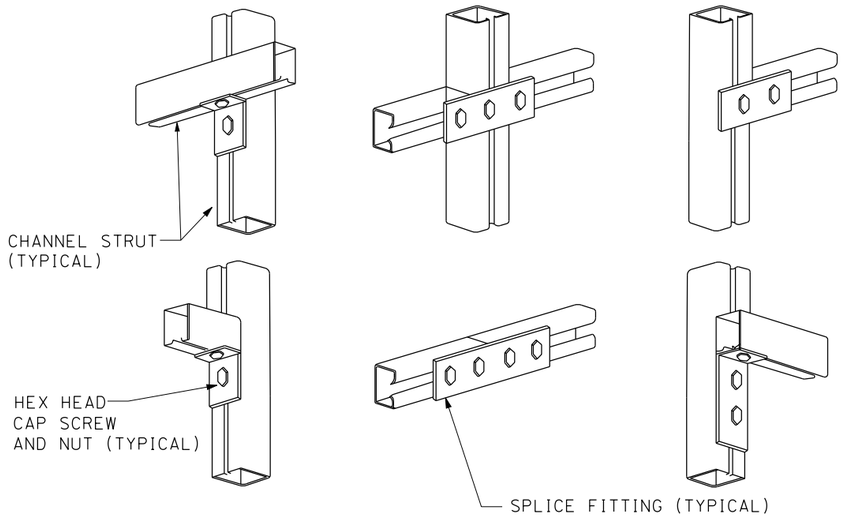
FOR MOUNTING PIPES OR CONDUIT AT RIGHT ANGLES TO THE BEAM DETAIL



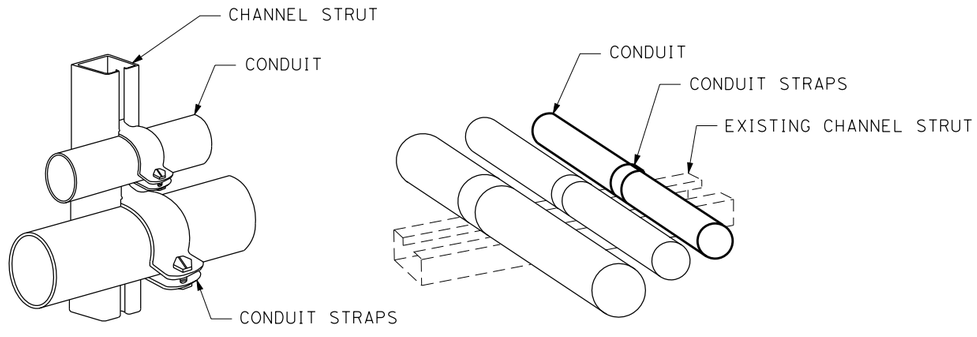
FOR MOUNTING PIPES OR CONDUIT PARALLEL TO THE BEAM DETAIL



FOR MOUNTING PIPES OR CONDUIT VERTICALLY ACROSS BEAM EDGE DETAIL



TYPICAL EQUIPMENT SUPPORT CHANNEL, FITTINGS AND FASTENERS



MOUNTING ON STRUT DETAILS

CONDUIT MOUNTING AND ATTACHMENT DETAILS (ANTIOCH BRIDGE)

NO SCALE

E-15

SHEET	OF
15	16

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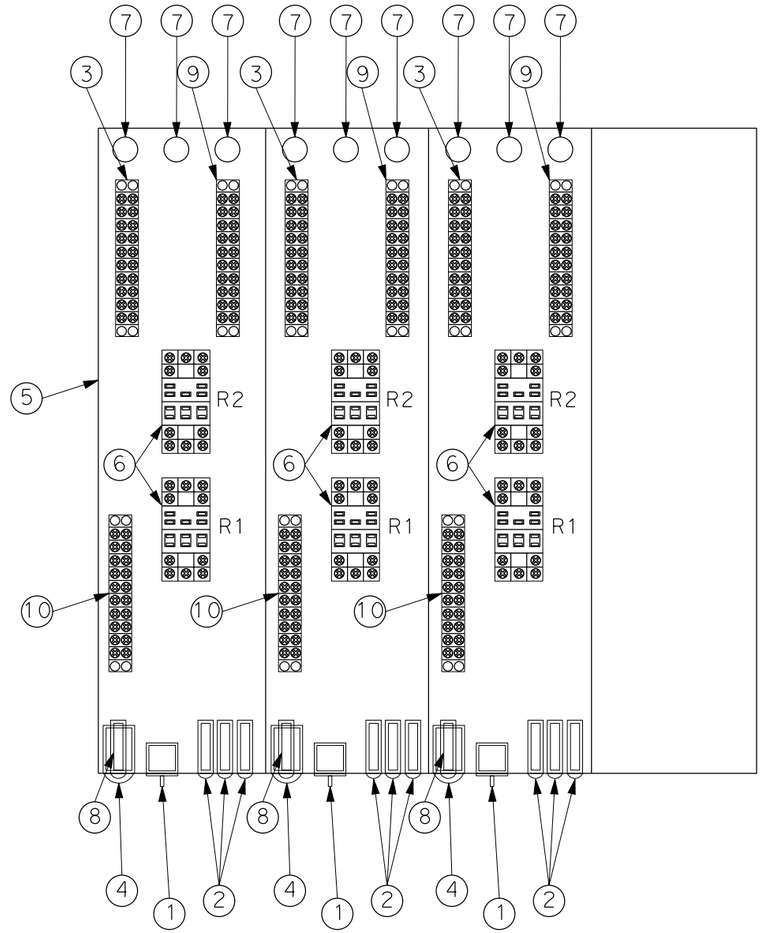
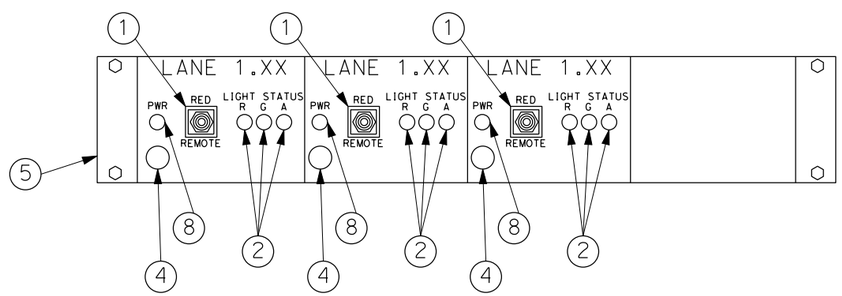
ITEM	COMPONENT
(1)	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
(2)	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
(3)	TERMINAL BLOCKS FOR INDICATOR LIGHT CANOPY CABLE AND POWER
(4)	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
(5)	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS.
(6)	TWO (2) NEW DPDT RELAYS
(7)	DRILLED HOLES AT BOTTOM OF DRAWER FOR INDICATOR LIGHT CABLE
(8)	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION
(9)	TERMINAL BLOCKS FOR INDICATOR LIGHT BOOTH CABLE
(10)	TERMINAL BLOCKS FOR INDICATOR LIGHT PANEL CABLE

TOP VIEW



FRONT VIEW



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REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

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NOTES:

1. ALL EQUIPMENT SHALL BE SECURED. NO EQUIPMENT WILL BE LAYING IN BOTTOM OF CABINET. INSTALLATION SHALL BE NEAT, DRESSED AND ACCORDING TO THE PLANS.
2. CONTRACTOR SHALL SUBMIT MATERIAL SUBMITTALS FOR ALL CABINET COMPONENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
3. INDICATOR LIGHT CABLES TO BE WIRED ACCORDING TO THE INDICATOR LIGHT WIRING DIAGRAM AS SHOWN ON SHEET E-13.
4. INDICATOR LIGHT DRAWER LAYOUT SHOWN FOR TYPICAL CMS CABINET.
5. ROUTE ALL CABLES THROUGH DRILLED HOLES AT BOTTOM OF DRAWER. INCLUDE PLASTIC GROMMETS IN HOLE.
6. TERMINATE ALL CABLES ON NEW TERMINATION BLOCKS.
7. FASTEN ALL CABLES TO DRAWER TO PREVENT STRAINING ON TERMINATION BLOCKS.
8. EACH CABINET DRAWER SHALL BE DESIGNED TO ACCOMMODATE UP TO FOUR (4) INDICATOR CONTROL LANES.
9. CONTRACTOR TO LEAVE AT LEAST ONE RACK UNIT OF SPACE BETWEEN DRAWER AND BOTTOM OF CABINET.

INDICATOR LIGHT CABINET DRAWER LAYOUT (ANTIOCH BRIDGE)

NO SCALE

E-16

SHEET	OF
16	16

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04	CC,Sol	80	R3.21	33	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU No. C 63977 Exp. 09/30/10 CIVIL — STATE OF CALIFORNIA

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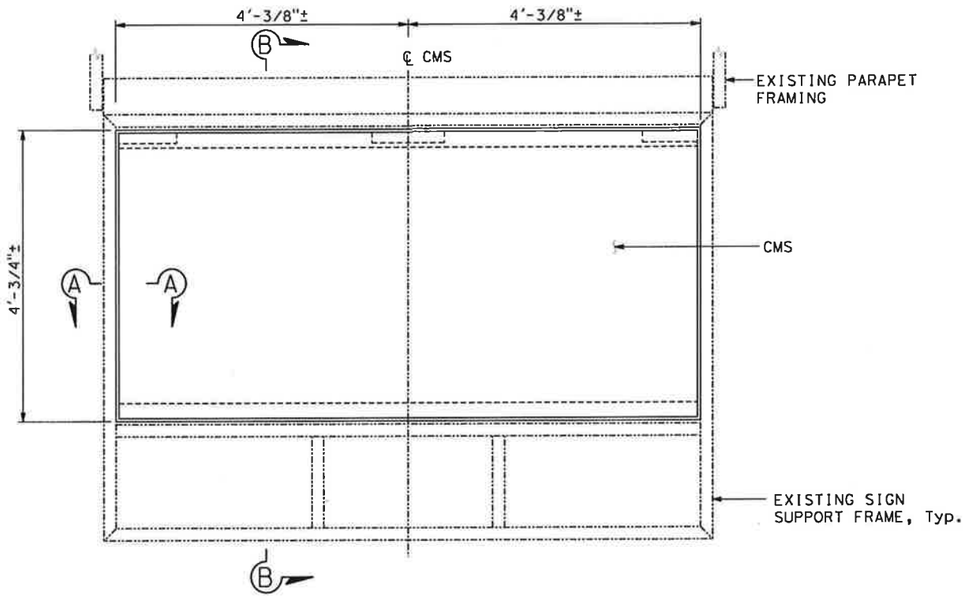
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



CMS SUPPORT ELEVATION
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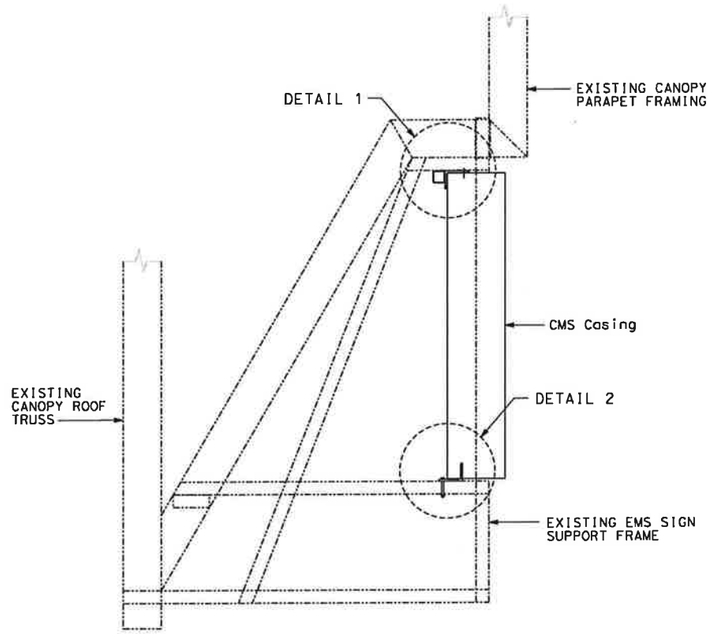


SECTION B-B
1"=1'-0"

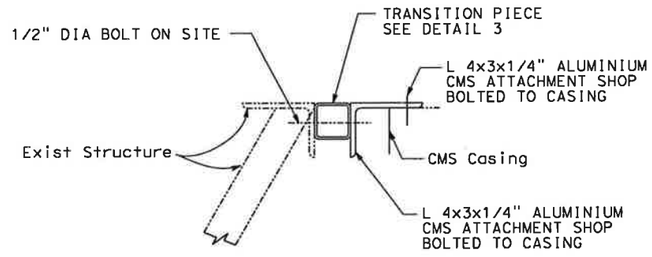
Note:

For location and number of new CMS panels, see Layout Sheet L-5.

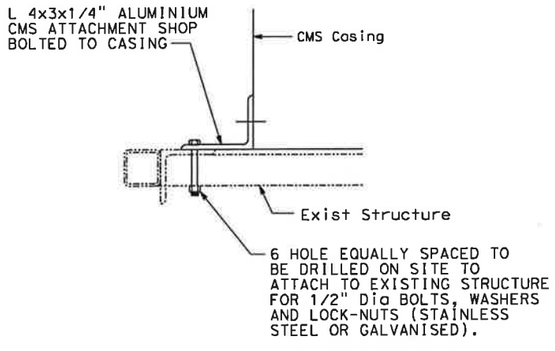
Legend:

——— Indicates New Structure

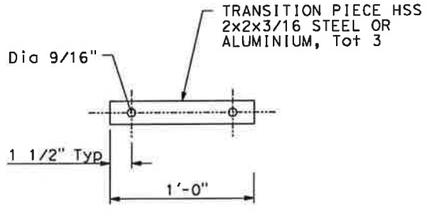
- - - - - - Indicates Exist Structure



DETAIL 1
3"=1'-0"



DETAIL 2
3"=1'-0"



DETAIL 3
2"=1'-0"

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT		DESIGN	BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
SIGN OFF DATE		DETAILS	BY E. Garnica	CHECKED	Guoping Xu PROJECT ENGINEER
DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)		QUANTITIES	BY	CHECKED	CU EA

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

BRIDGE NO. | POST MILE 0.63

CARQUINEZ BRIDGE
CMS SUPPORT

SHEET S-1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)								SHEET	OF
03/09/10								1	1

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USERNAME => Flor in_Lo DATE PLOTTED => 3/12/2010 TIME PLOTTED => 9:57:16 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	34	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE LATEST VERSION OF THE CALTRANS STANDARD PLAN AND SPECIFICATIONS.
2. CALL UNDERGROUND SERVICE ALERT 48 HOURS BEFORE EXCAVATION U.S.A. (800) 277-2600.
3. ALL ELECTRICAL AND CMS EQUIPMENT, INFRASTRUCTURE, LANDSCAPING OR BUILDINGS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. ALL ELECTRICAL AND CMS EQUIPMENT INCLUDING CONDUITS, JUNCTION AND SPLICE EQUIPMENT RACK ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER.
5. SERVICE EQUIPMENT, AND CMS CABINET ENCLOSURES, CONTROLLER ASSEMBLIES, CMS AND OTHER ELECTRICAL EQUIPMENT ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATION SHALL BE DETERMINED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
6. ALL EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHOWN ON THE PLANS IS FOR REFERENCE AND SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. LOCATIONS ARE APPROXIMATED. ANY DAMAGE TO THE EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.
7. NEW CIRCUIT BREAKERS TO BE INSTALLED TO EXISTING PANEL BOXES SHALL MATCH THE EXISTING TYPE OR APPROVED BY THE ENGINEER AS REQUIRED.
8. ALL DIMENSIONS INDICATED ARE TO BE VERIFIED IN FIELD PRIOR TO COMMENCING WORK.
9. THE CONTRACTOR SHALL IDENTITY AND VERIFY ALL EXISTING UTILITIES, POWER SOURCES AND POWER CONSUMPTIONS AS REQUIRED OR NEEDED AS SHOWN ON THE PLANS PRIOR TO COMMENCING WORK.
10. SEE STRUCTURAL PLANS FOR EXACT LOCATION OF CMS STRUCTURES, FRAMES AND MOUNTING BRACKETS.
11. ALL ABOVE GROUND CONDUIT SHALL BE SUPPORTED AT A MINIMUM OF EVERY 5 FEET.
12. ALL ELECTRICAL ITEMS THAT USE ANCHORS TO ATTACH TO THE CONCRETE STRUCTURES SHALL USE STAINLESS STEEL POWER STUD ANCHORS-THREADED VERSION SIZED PER MANUFACTURER RECOMMENDATION AND EPOXY ANCHOR HOLES USING SEALANT WITH A RATED LIFE OF 25 YEARS OR GREATER.
13. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE NEC & NATIONAL ELECTRICAL SAFETY CODE. ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER NEC REQUIREMENTS. ALL COMPONENTS INCLUDING CONDUITS JUNCTION BOXES, CABLING, EQUIPMENT, AND CABINETS SHALL BE CLEARLY LABELED WITH PROPER TAGS, NAME PLATES, AND I.D. LABELS.
14. CONTRACTOR SHALL USE TYPE 1 CONDUIT IN TUNNEL AND TRENCH, TYPE 2 CONDUIT FOR EXPOSED CONDITIONS AND TYPE 4 FLEXIBLE CONDUIT AS SHOWN ON PLANS.
15. ALL EXTERIOR PULL BOXES AND JUNCTION BOXES SHALL BE NEMA 4X.
16. ALL ELECTRICAL AND EXTERIOR CONNECTIONS SHALL BE WEATHERPROOF.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ANY EXISTING CONDUIT AND/OR JUNCTION BOXES TO BE USED ON THIS CONTRACT PRIOR TO PULLING NEW CABLE THROUGH. ANY DAMAGE TO NEW OR EXISTING CABLE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.

LEGEND:

- CHANGEABLE MESSAGE SIGN
- EXISTING CONDUIT
- EXISTING CONDUIT WITH NEW CABLE
- NEW CONDUIT
- JUNCTION BOX
- EXISTING JUNCTION BOX
- P# EXISTING PLAZA CABINET
- CONDUIT IN
- CONDUIT OUT
- S EXISTING INDICATOR LIGHT SWITCH PANEL
- X-Y LANE X TO LANE Y CABLES
- TERMINAL BLOCK
- fo EXISTING FIBER OPTIC CABLE
- EXISTING TRAFFIC SIGNAL INDICATOR
- QUAD RECEPTICAL
- DUPLEX RECEPTICAL
- # NEW EQUIPMENT RACK # = RACK TYPE
- EXISTING CMS WORKSTATION
- S NEW INDICATOR LIGHT SWITCH CONSOLE PANEL
- RISER CONDUITS
- DROP CONDUITS
- NEW LED INDICATOR BOX

ABBREVIATIONS:

AM	AMBER
BK	BLACK
BL	BLUE
BN	BROWN
C	CONDUIT
CAB	CABINET
CEC	CALIFORNIA ELECTRICAL CODE
CMS	CHANGEABLE MESSAGE SIGN
COMM	COMMUNICATIONS
CPB	COMMUNICATIONS PULL BOX
CKT	CIRCUIT
E	EXISTING
ETC	ELECTRONIC TOLL COLLECTION
FDU	FIBER DISTRIBUTION UNIT
FO	FIBER OPTIC
GFI	GROUND FAULT INTERRUPT
GN	GREEN
ILB	INDICATOR LIGHT BOOTH
ILC	INDICATOR LIGHT CANOPY
ILP	INDICATOR LIGHT PANEL
J-BOX	JUNCTION BOX
JB	JUNCTION BOX
KVA	KILO-VOLT AMPERE
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT EMITTING DIODE
MLO	MAIN LUG ONLY
NEC	NATIONAL ELECTRICAL CODE
N	NEUTRAL (GROUNDED CONDUCTOR)
ORT	OPEN ROAD TOLLING
PB	CEILING/WALL MOUNTED PULL BOX
PCC	PORTLAND CEMENT CONCRETE
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
RMC	RIGID METAL CONDUIT
R#	RELAY (# = RELAY NUMBER)
RD	RED
SS	STAINLESS STEEL
TEES	TRANSPORTATION ELECTRICAL EQUIPMENT
SM	SINGLE MODE
TB	TERMINAL BLOCKS
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYPE A CABLE	36 SINGLE MODE FIBER OPTIC CABLE
TYPE D CABLE	12 SINGLE MODE FIBER OPTIC CABLE
TYPE 1 CONDUIT	GALVANIZED RIGID STEEL (GRS)
TYPE 2 CONDUIT	TYPE 1 CONDUIT COATED WITH PVC OR POLYETHYLENE
TYPE 4 CONDUIT	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
UPS	UNINTERRUPTIBLE POWER SUPPLY
XFMR	TRANSFORMER
YL	YELLOW

INDEX:

STANDARD NOTES:

- BC INSTALL PULL BOX IN EXISTING CONDUIT RUN.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- SC SPLICE NEW TO EXISTING CONDUCTORS.
- AB ABANDONED
- RD REMOVE AND DISPOSE
- RS REMOVE AND SALVAGE

WIRING DIAGRAM LEGEND:

- CB CIRCUIT BREAKER
- NB NEUTRAL BUS
- GB GROUND BUS
- ENCLOSURE BOND
- GROUNDING ELECTRODE
- CIRCUIT BREAKER
- R RECEPTACLE

GENERAL NOTES, LEGEND, ABBREVIATIONS AND INDEX OF DRAWINGS (CARQUINEZ BRIDGE)

E-1

SHEET	OF
1	19

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REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

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55 S. MARKET STREET
SUITE 1500
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PROJECT NOTES:

1. INSTALL NEW CAT-5e CABLE IN EXISTING CONDUIT.
2. REMOVE AND DISPOSE OF EXISTING GREEN, BLACK, & WHITE CABLES.
3. INSTALL NEW TYPE 2 (2 ½" C) CONDUIT.
4. RE-USE AT (E) PANEL-D THE (E) 20A-1P CIRCUIT BREAKER #36 FOR NEW CMS CONTROLLER RACK.
5. INSTALL NEW TYPE 1 (3/4" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS) FROM (E) PANEL-D TO NEW CMS CABINET. PROVIDE CONDUIT SUPPORT EVERY 5 FT. O.C. MAX.
6. CORE DRILL (E) CONCRETE SLAB.
7. INSTALL NEW TYPE 1 (1" C) CONDUIT.
8. INSTALL TYPE 3 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS. SECURE PULL BOX TO CANOPY ROOF.
9. INSTALL NEW TYPE 2 (1" C) CONDUIT WITH 4 #12 & 1 #12G (120V, CMS SIGNS).
10. ALL WALL, CEILING AND FLOOR CONCRETE PENETRATIONS SHALL BE CORE-DRILLED AS DIRECTED AND APPROVED BY CALTRANS SUFFICIENTLY LARGE TO ACCOMMODATE CONDUIT PLUS FLUSH MOUNTED END BELL. ALL CORE-DRILLS SHALL BE MADE WATER-TIGHT, SEALED AROUND CONDUIT PER CALTRANS REQUIREMENTS WITH FAST-SETTING EPOXY RESIN THROUGHOUT THE DEPTH OF HOLE.
11. INSTALL NEW INDICATOR LIGHT CANOPY CABLE.
12. INSTALL NEW INDICATOR LIGHT BOOTH CABLE.
13. INSTALL NEW INDICATOR LIGHT CONSOLE CABLE.
14. INSTALL NEW CMS COMM CABLE.
15. INSTALL NEW TYPE 4 (1" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS SIGN).
16. (E) CMS WORKSTATION TO REMAIN.
17. INSTALL NEW TYPE 4 (1½" C) CONDUIT.
18. INSTALL NEW 14 #12 & 7 #12G (120V, CMS SIGNS).
19. (E) FDU TO REMAIN.
20. REMOVE AND DISPOSE OF EXISTING INDICATOR LIGHT CABLE.
21. INSTALL NEW CMS PANEL AS SPECIFIED IN CONTRACT DOCUMENTS.
22. INSTALL NEW SEVEN (7) 15A-1P CIRCUIT BREAKERS AT (E) PANEL-CMS IN (E) SPACES 11,13,15,10,12,14 AND 16 (FOR CMS SIGNS 6,7,8,9,10,11 AND 12).
23. ROUTE NEW CABLES THROUGH EXISTING CONDUIT.
24. MODIFY EXISTING GREEN INDICATOR LIGHT AND REPLACE WITH GREEN/FLASHING AMBER LED INDICATOR BULB. REPLACE EXISTING RED INDICATOR LIGHT WITH RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.
25. INSTALL NEW TYPE 2 (1½" C) CONDUIT.
26. INSTALL NEW TYPE 2 (1 1/4" C) CONDUIT WITH 6 #12 & 3 #12G (120V, CMS SIGN)
27. ROUTE NEW CMS COMM CABLE THROUGH EXISTING JUNCTION BOX.
28. INSTALL NEW TYPE 3 EQUIPMENT RACK FOR LANES 6-12 AS SPECIFIED IN CONTRACT DOCUMENTS.
29. INSTALL INDICATOR LIGHT SWITCH CONSOLE PANEL.
30. REMOVE EXISTING INDICATOR LIGHT SWITCH IN TOLL BOOTH.
31. INSTALL NEW CMS CONTROLLERS. ROUTE CAT-5E PATCH CABLES FROM EACH CMS CONTROLLER TO NEW ETHERNET SWITCH IN EXISTING CMS CABINET.
32. INSTALL NEW TYPE 1 (2" C) CONDUIT.
33. INSTALL NEW TYPE 2 (2" C) CONDUIT.
34. INSTALL TYPE 1 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS.
35. INSTALL NEW TYPE 1 (1½" C) CONDUIT.
36. INSTALL NEW TYPE 1 (2 ½" C) CONDUIT.
37. INSTALL NEW TYPE 2 (1" C) WITH 2 #12 & 1 #12G (120V, CMS SIGN)
38. INSTALL NEW TYPE 4 (2" C) CONDUIT
39. INSTALL AND TERMINATE INDICATOR LIGHT CABLES TO NEW TERMINAL BLOCKS AND WIRE TO SWITCH PANEL AS SHOWN IN PLANS AND APPROVED BY THE ENGINEER.
40. INSTALL LB FITTING.
41. INSTALL NEW LED PUSH BUTTON INDICATOR BOX.
42. PROVIDE NEW REVISED (TYPED WRITTEN) PANEL SCHEDULE.
43. INSTALL NEW TYPE 4 (1" C) CONDUIT.
44. INSTALL NEW TYPE 1 (1 ½" C) CONDUIT.
45. REPLACE EXISTING RED INDICATOR LIGHT WITH NEW RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.

PROJECT NOTES (CARQUINEZ BRIDGE)

E-2

SHEET	OF
2	19

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04	Sol	80	0.63	36	123

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PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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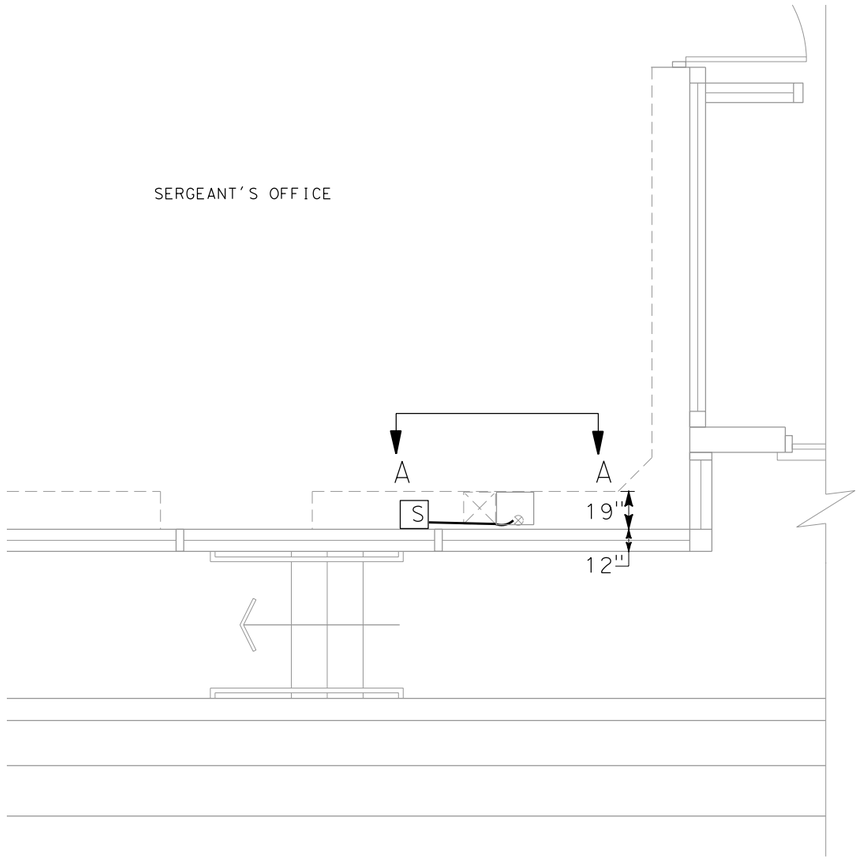
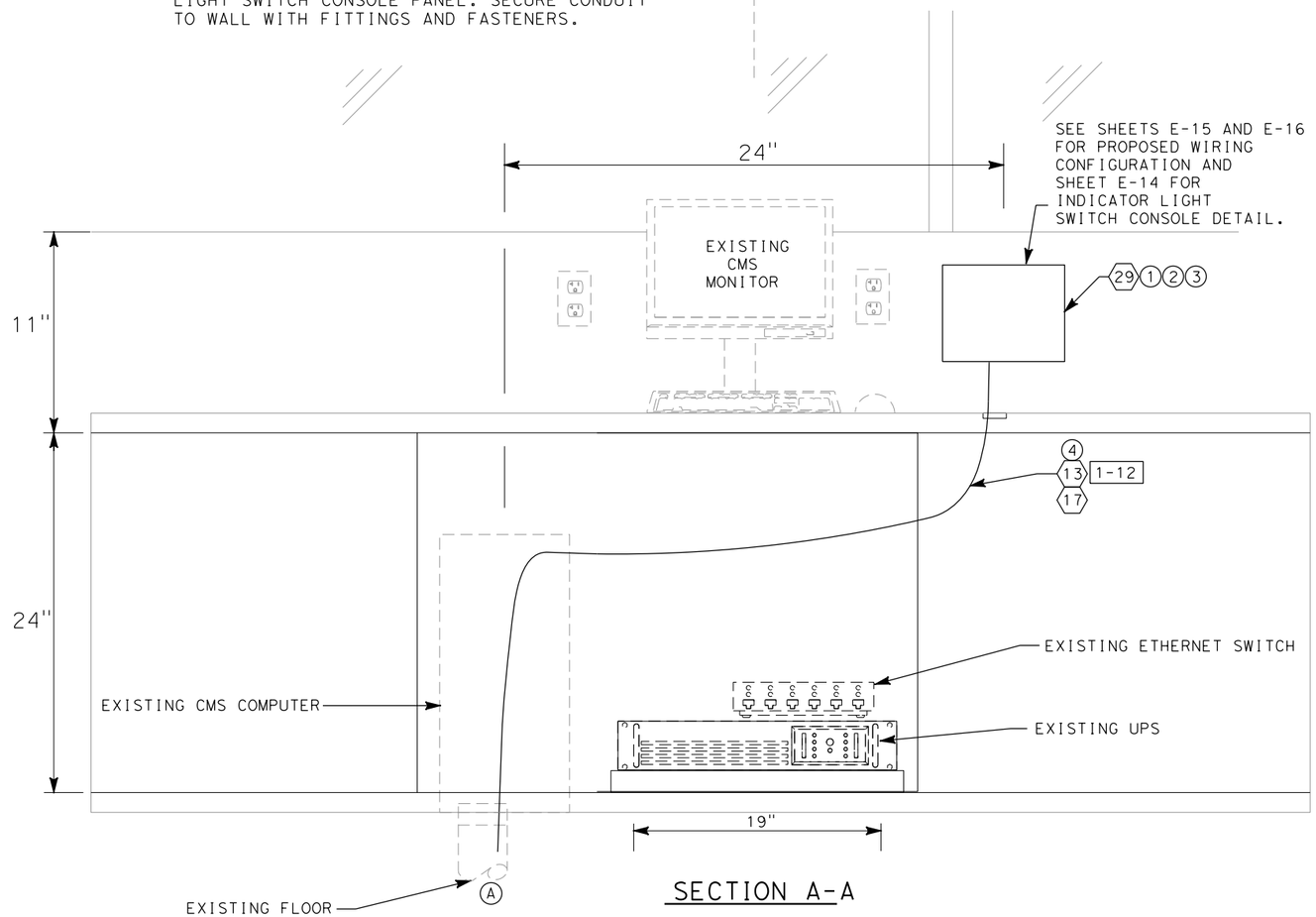
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

SHEET NOTES:

1. NEW INDICATOR LIGHT SWITCH CONSOLE TO BE MOUNTED VERTICALLY TO EXISTING FURNITURE. CONSOLE SHALL FIT FLUSH AGAINST BACK WALL.
2. CONTRACTOR TO CUT OPENING TO FIT PROPOSED INDICATOR LIGHT SWITCH CONSOLE AND SECURE WITH ANCHOR BOLTS.
3. ANY EXISTING FURNITURE REQUIRED TO BE RE-ARRANGED FOR PLACEMENT OF INDICATOR LIGHT SWITCH CONSOLE PANEL SHALL BE COORDINATED WITH LIEUTENANT.
4. CONTRACTOR TO ROUTE ALL CABLES TO INDICATOR LIGHT SWITCH CONSOLE PANEL. SECURE CONDUIT TO WALL WITH FITTINGS AND FASTENERS.



MAIN FLOOR PLAN - PARTIAL FLOOR PLAN VIEW



SECTION A-A

TOLL PLAZA OPERATIONS BUILDING
PARTIAL MAIN FLOOR PLAN CONDUIT ROUTING
(CARQUINEZ BRIDGE)

NO SCALE

E-3

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3	19

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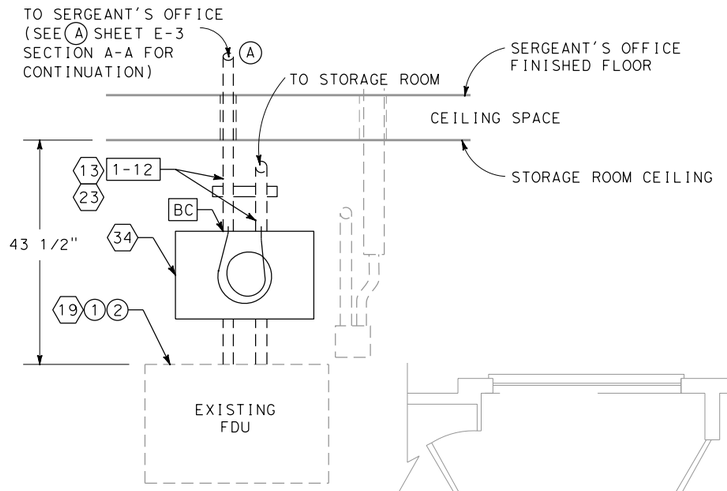
SHEET NOTES:

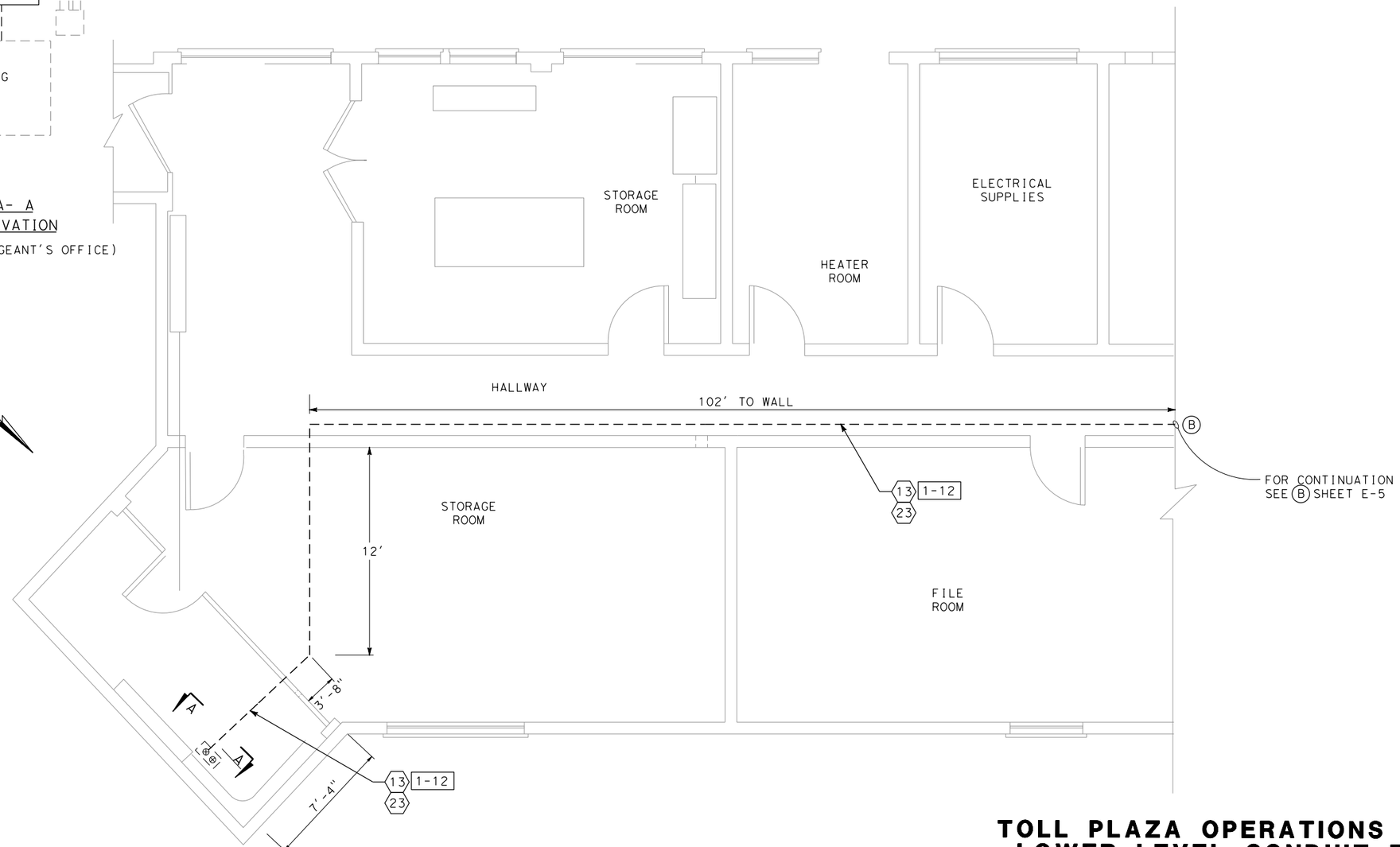
(1) CONTRACTOR TO DISCONNECT EXISTING FIBER CABLES AND JUMPER CABLES AND PULL BACK TO CUT IN NEW TYPE 1 JUNCTION BOX. INSTALL NEW CHANNEL STRUTS ABOVE NEW JUNCTION BOX AND SECURE CONDUITS TO WALL.

(2) CONTRACTOR TO RE-TERMINATE FIBER AND JUMPER CABLES AND ROUTE NEW INDICATOR LIGHT CONSOLE CABLES THROUGH EXISTING 2" CONDUIT AND UP TO NEW INDICATOR LIGHT SWITCH CONSOLE PANEL THROUGH EXISTING 1 ½" CONDUIT TO SEARGENTS OFFICE.



SECTION A- A
CONDUIT ELEVATION

(STORAGE ROOM TO SERGEANT'S OFFICE)



BASEMENT - PARTIAL FLOOR PLAN VIEW

TOLL PLAZA OPERATIONS BUILDING LOWER LEVEL CONDUIT ROUTING (CARQUINEZ BRIDGE)

NO SCALE

E-4

SHEET	OF
4	19

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REGISTERED CIVIL ENGINEER — DATE 3/12/10

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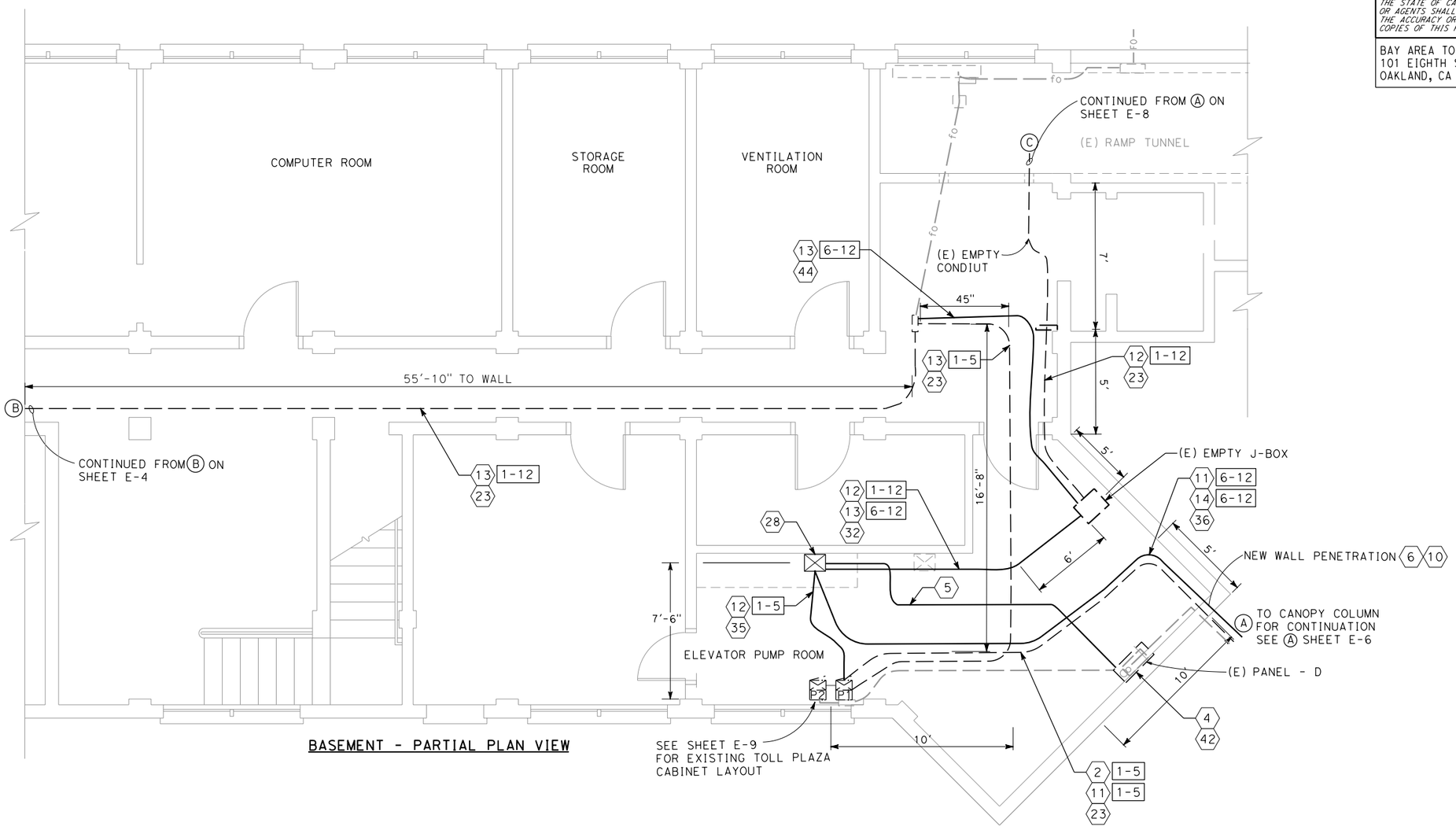

BASEMENT - PARTIAL PLAN VIEW

TOLL PLAZA OPERATIONS BUILDING LOWER LEVEL CONDUIT ROUTING

(CARQUINEZ BRIDGE)

NO SCALE

E-5

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5	19

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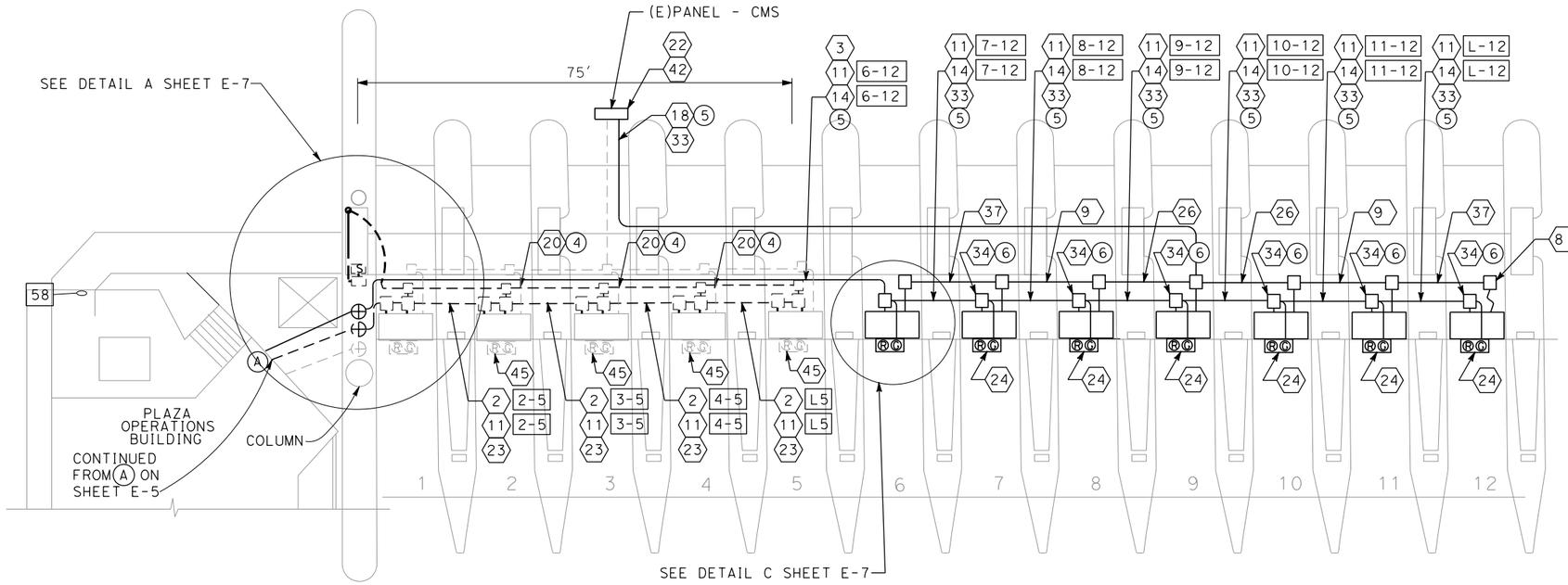
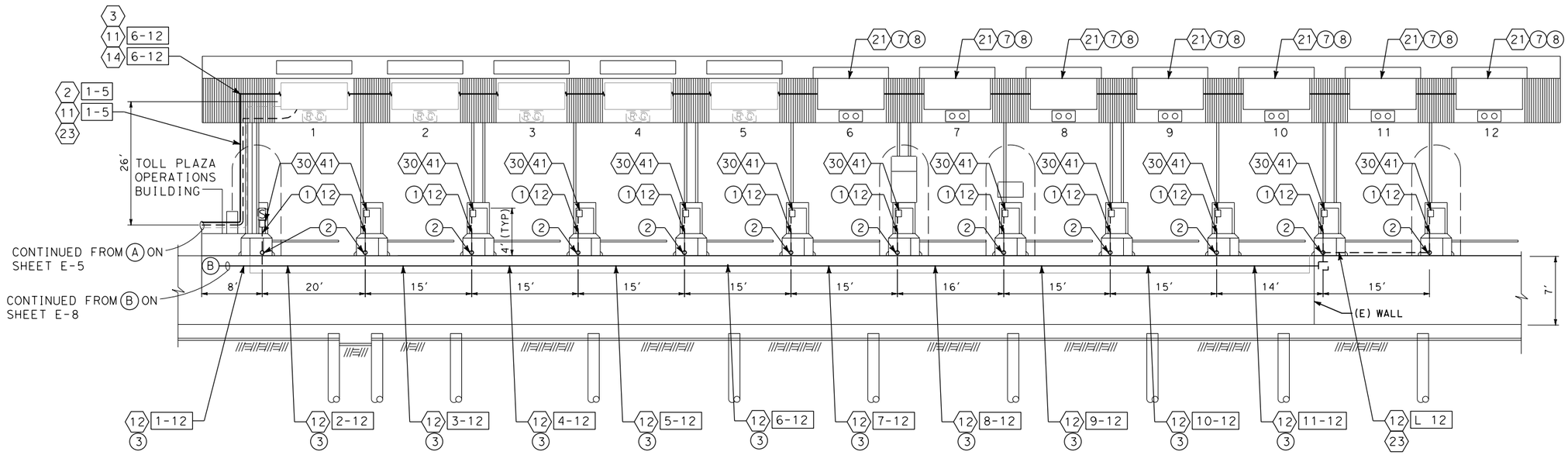


TOLL PLAZA - PLAN VIEW



TOLL PLAZA - ELEVATION VIEW

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SHEET NOTES:

1. CONTRACTOR TO ROUTE NEW INDICATOR LIGHT BOOTH CABLE BEHIND WALL TO NEW TOLL BOOTH LED INDICATOR BOX.
2. CONTRACTOR TO ROUTE NEW TYPE 4 (1" C) FLEX CONDIUIT ALONG TOLL BOOTH FLOOR APPROX. 36" TO EXISTING FLOOR OPENING.
3. ROUTE NEW INDICATOR LIGHT BOOTH CABLES ALONG EXISTING CABLE RACEWAY.
4. ABANDONED EXISTING CONDUIT IN PLACE.
5. CONTRACTOR TO SUPPLY CONDUIT SUPPORT.
6. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.
7. REMOVE AND SALVAGE EXISTING STATIC SIGNS IN LANES 1-3 AND INSTALL NEW CMS PANELS.
8. SEE SHEET S-1 FOR CMS PANEL MOUNTING TO CANOPY DETAILS.

TOLL PLAZA OPERATIONS BUILDING TUNNEL TO CANOPY CONDUIT ROUTING (CARQUINEZ BRIDGE)

NO SCALE

E-6

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	40	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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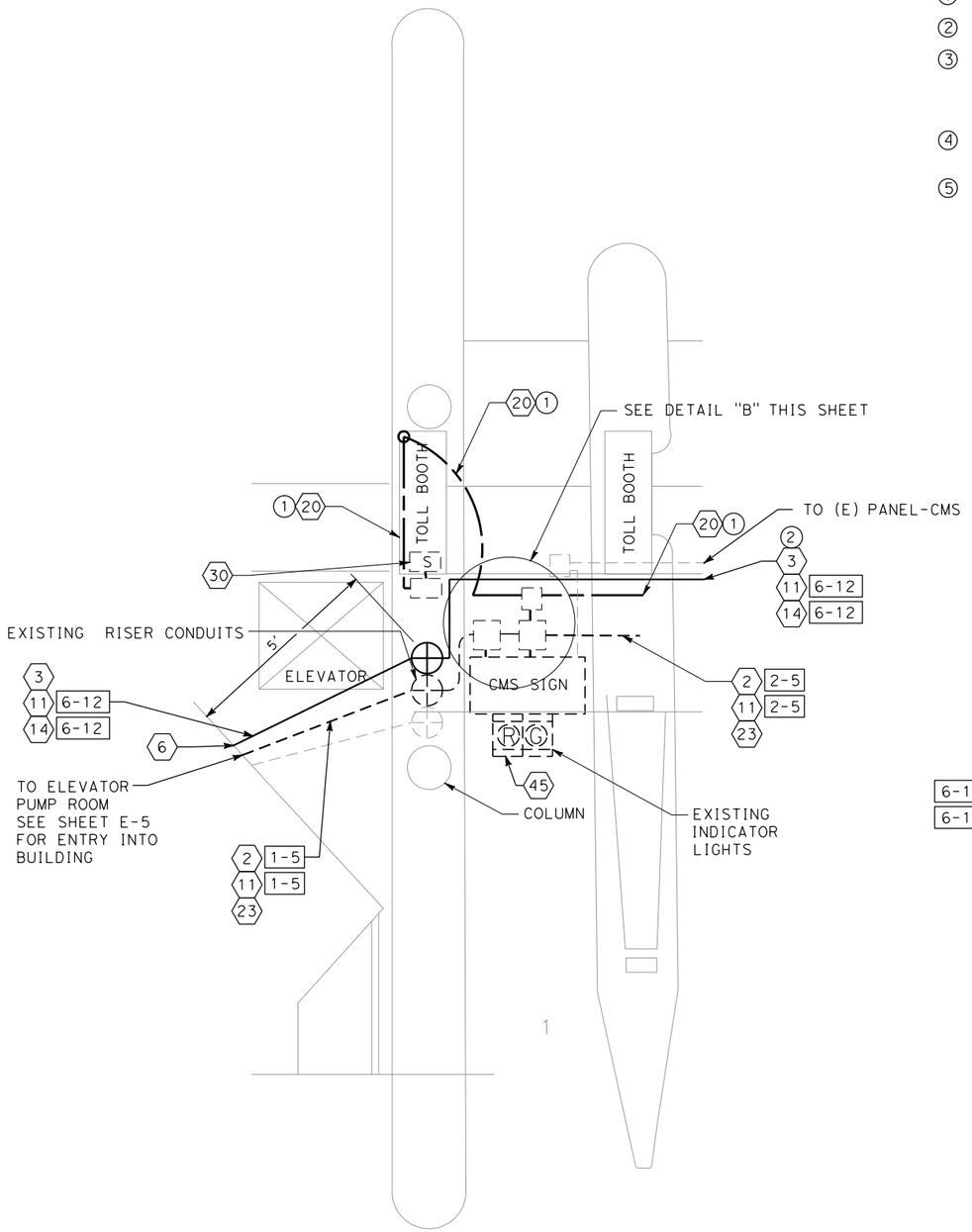
101 EIGHTH STREET
OAKLAND, CA 94607

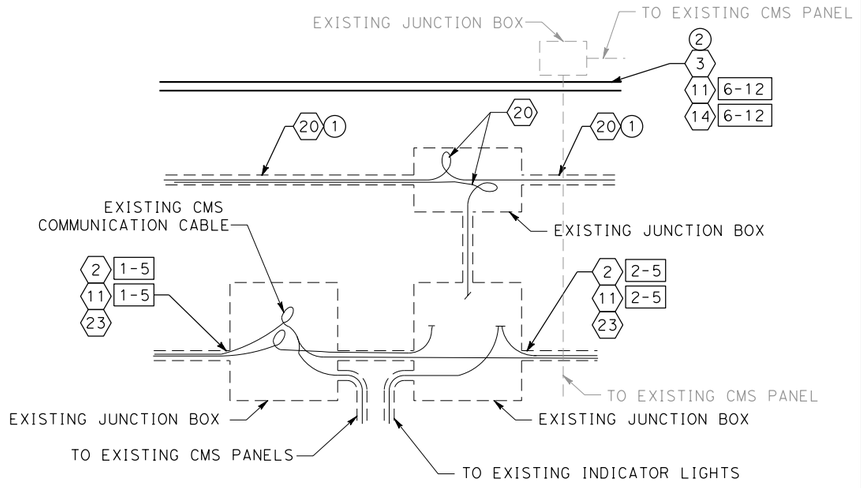
URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

SHEET NOTES:

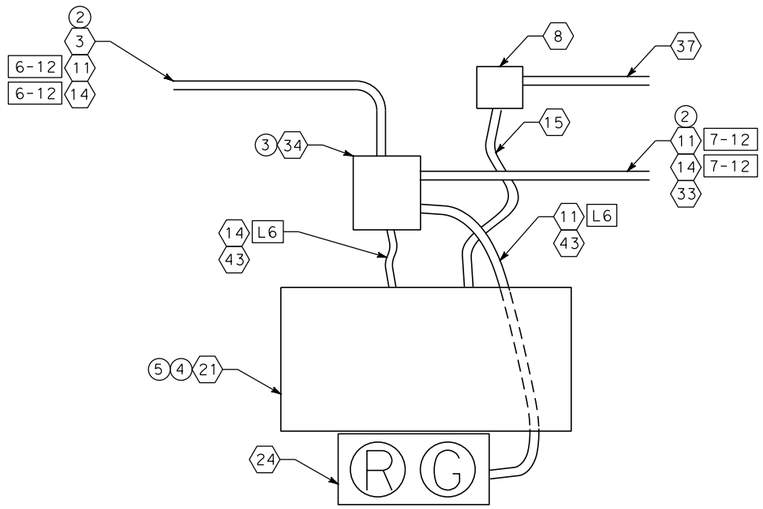
1. ABANDONED EXISTING CONDUIT IN PLACE.
2. CONTRACTOR TO SUPPLY CONDUIT SUPPORT.
3. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.
4. REMOVE AND SALVAGE EXISTING STATIC SIGNS IN LANES 1-3 AND INSTALL NEW CMS PANELS.
5. SEE SHEET S-1 FOR CMS PANEL MOUNTING TO CANOPY DETAILS.



DETAIL A



DETAIL B



DETAIL C

TOLL PLAZA OPERATIONS BUILDING CONDUIT ROUTING DETAILS (CARQUINEZ BRIDGE)

NO SCALE

E-7

SHEET	OF
7	19

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EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	41	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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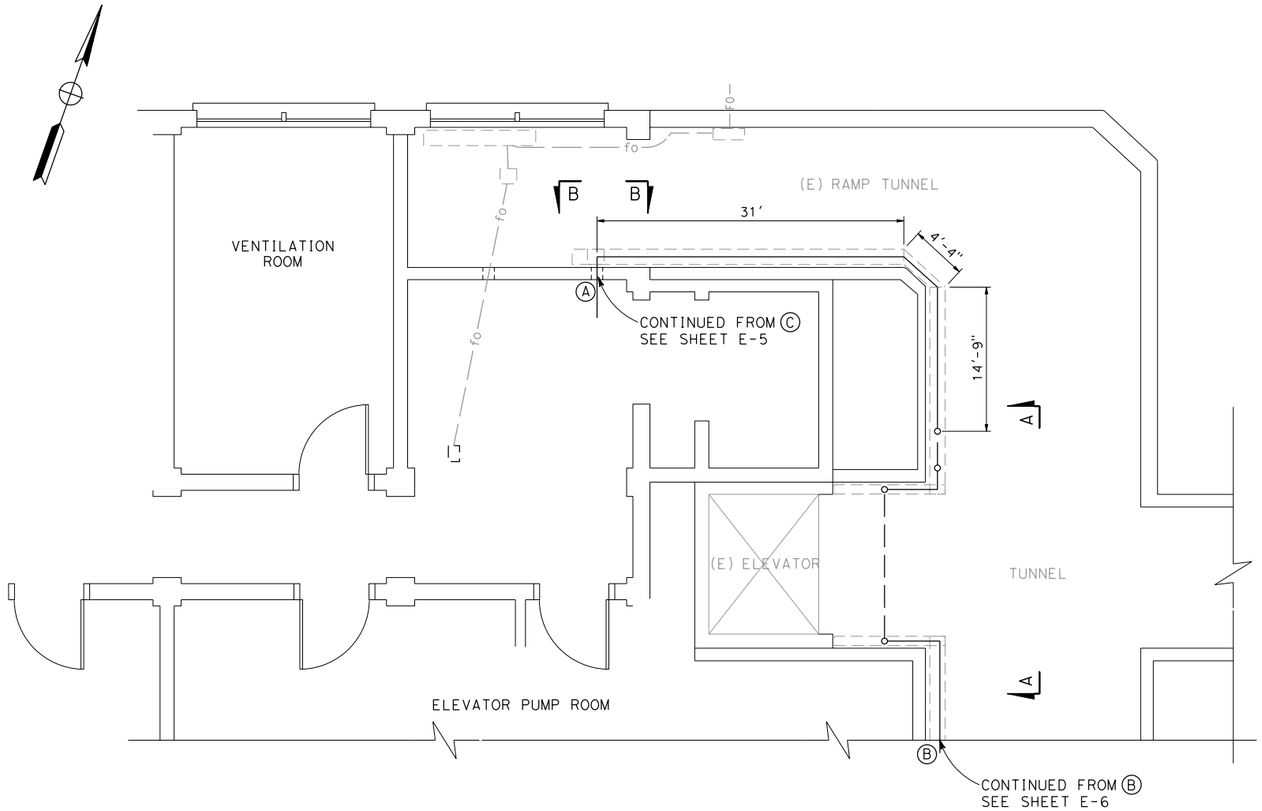
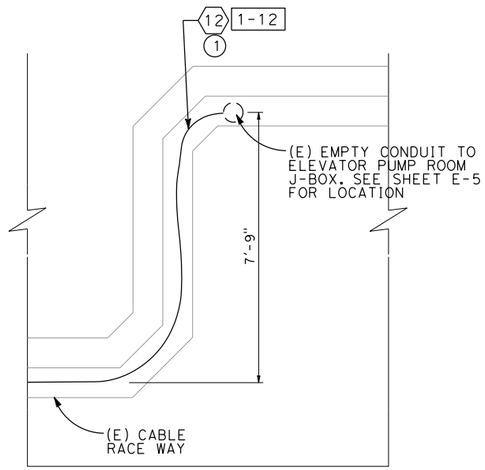
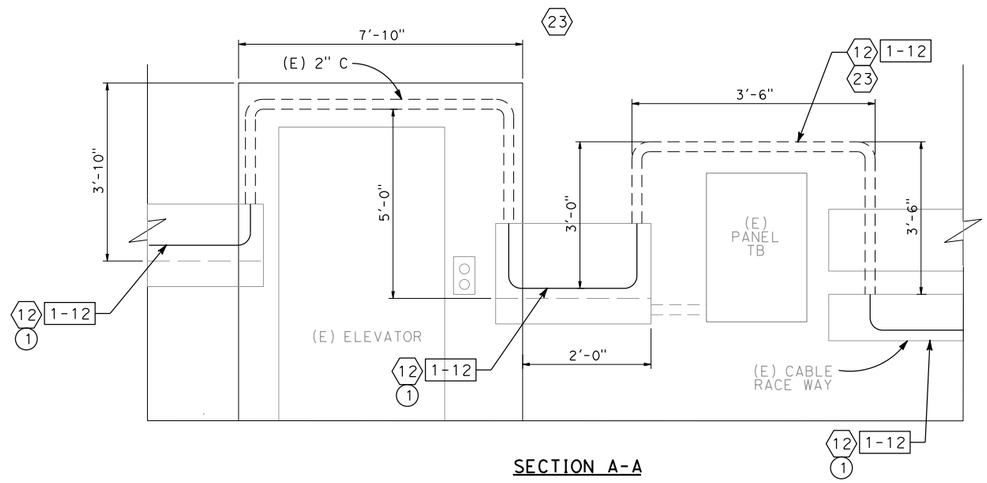




SECTION B-B



SECTION A-A

SHEET NOTES:

① ROUTE NEW INDICATOR LIGHT BOOTH CABLES ALONG EXISTING CABLE RACEWAY.

TOLL PLAZA OPERATIONS BUILDING
TUNNEL CONDUIT ROUTING
(CARQUINEZ BRIDGE)

NO SCALE

E-8

SHEET	OF
8	19

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ITEM	COMPONENT
①	REMOVE/REPLACE EXISTING CMS CONTROLLERS WITH NEW CMS CONTROLLERS.
②	REMOVE EXISTING ETHERNET SWITCH AT CABINET BOTTOM AND FURNISH AND INSTALL NEW RACK MOUNTABLE SWITCH WITH 14-10/100BASE-T AND 2-100BASE-FX(SM) PORTS. FIBER PORT TO MATCH EXISTING. INSTALL NEW SWITCH RIGHT UNDER CMS CONTROLLER (RACK MOUNTED-NO SHELVES.
③	EXISTING PLAZA F.O. PATCH PANEL.
④	REMOVE/REPLACE EXISTING POWER STRIP WITH NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP.
⑤	EXISTING UPS TO BE REMOVED

ITEM	COMPONENT
⑥	NEW ELECTRICAL PANEL
⑦	EXISTING DATA TVSS TO BE REMOVED.
⑧	NEW 15 AMP GFI OUTLET
⑨	REMOVE EXISTING 15 AMP OUTLET
⑩	REMOVE EXISTING 1/4 AMP BREAKERS.
⑪	EXISTING ELECTRICAL PANEL
⑫	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
⑬	MOVE EXISTING EQUIPMENT TO ACCOMODATE NEW CABINET LAYOUT.
⑭	ONE (1) NEW 2 AMP BREAKER (120 VAC)

ITEM	COMPONENT
⑮	ONE (1) NEW NEC CLASS 3, 100 WATT 1:1, 120 VAC TRANSFORMER
⑯	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
⑰	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
⑱	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS. SEE SHEET E-20 FOR CABINET DRAWER LAYOUT.
⑲	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120 VAC) FOR POWER INDICATION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	42	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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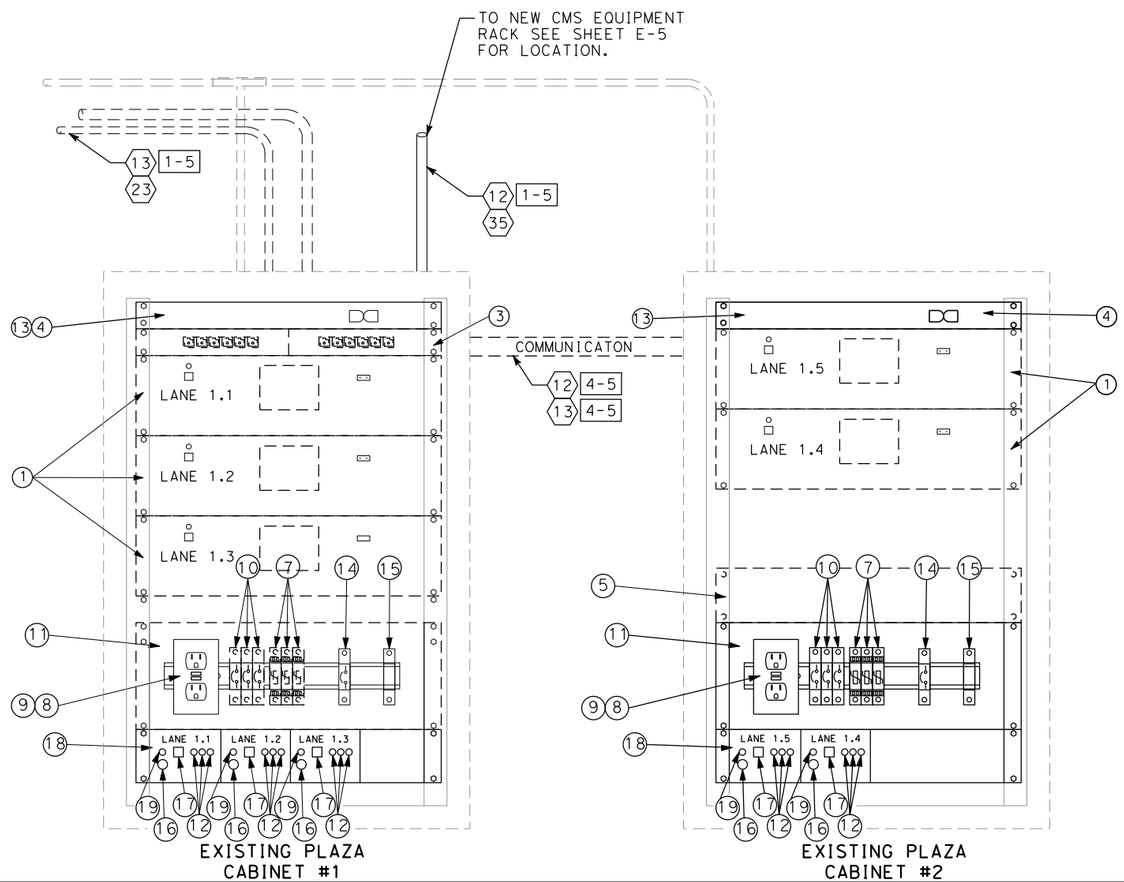
ELEVATOR PUMP ROOM WALL



DETAIL A
EXISTING TOLL PLAZA CABINET ELEVATION

NOTES:

1. EQUIPMENT TO MEET CALTRANS TEES REQUIREMENTS.
2. REMOVED EQUIPMENT AND MATERIALS SHALL BE RETURNED TO BATA.
3. ALL EQUIPMENT SHALL BE SECURED. NO EQUIPMENT WILL BE LAYING IN BOTTOM OF CABINET. INSTALLATION SHALL BE NEAT, DRESSED AND ACCORDING TO THE PLANS.
4. CONTRACTOR SHALL SUBMIT MATERIAL SUBMITTALS FOR ALL CABINET COMPONENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
5. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS.
6. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPERATE NEMA 5-15 SOCKET.
7. CONTRACTOR TO LEAVE ONE (1) RACK UNIT OF SPACE AT BOTTOM OF CABINET.
8. EXISTING CMS CONTROLLER TO BE REPLACED WITH NEW CONTROLLER. NEW CMS CONTROLLER TO BE PROVIDED BY BATA.

CMS PLAZA CABINET ELEVATION VIEW FOR LANES 1-5 (CARQUINEZ BRIDGE)

NO SCALE

E-9

SHEET	OF
9	19

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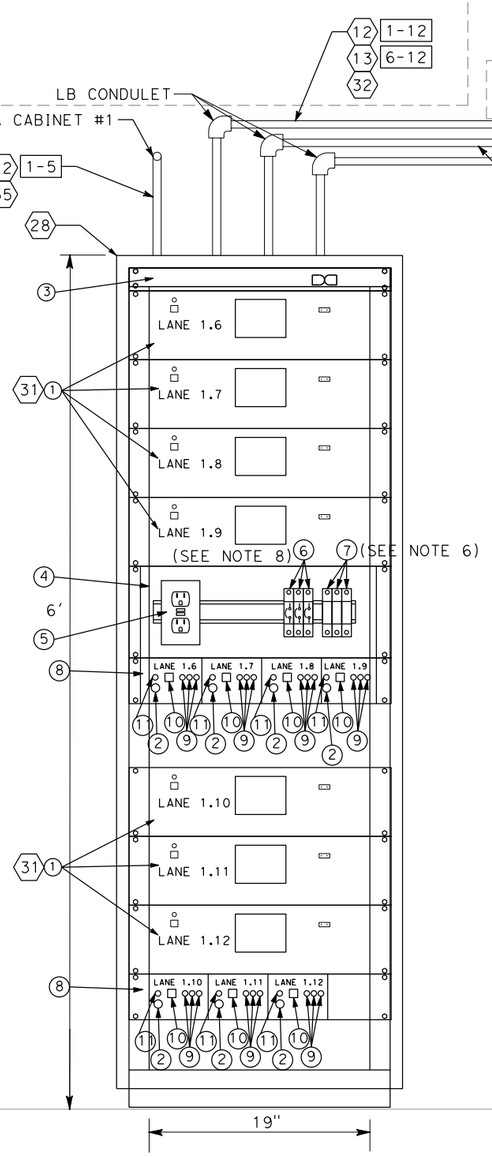
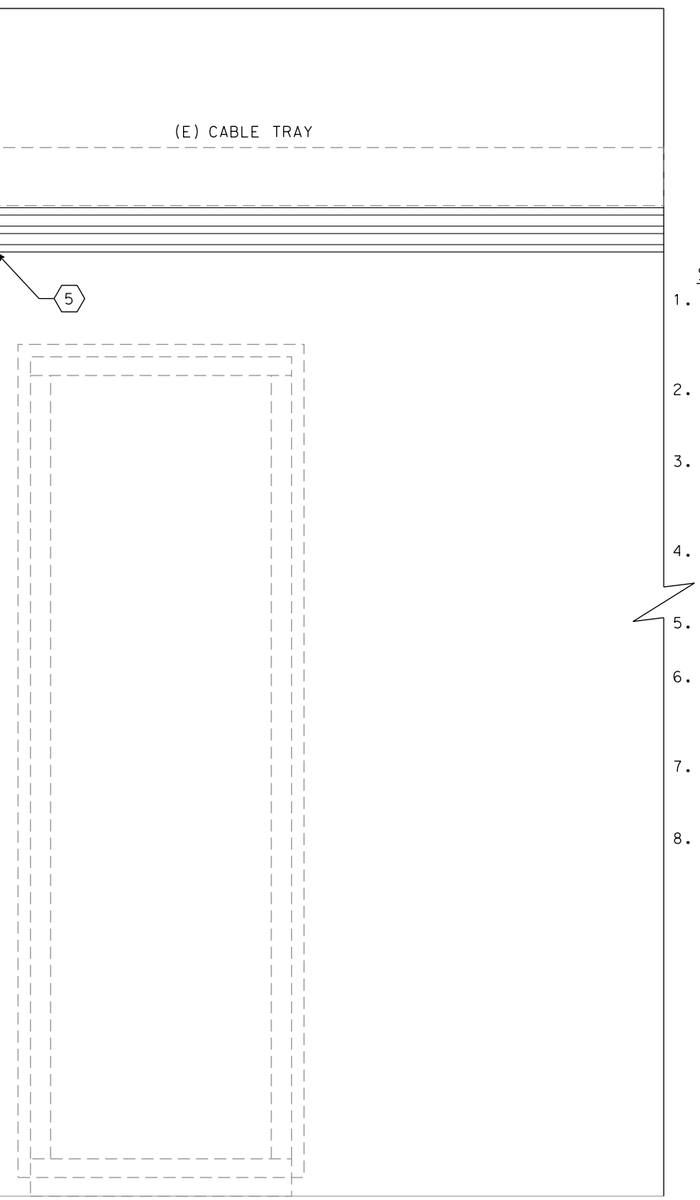
ITEM	COMPONENT
①	NEW CMS CONTROLLER
②	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
③	NEW IP ADDRESSABLE POWER STRIP
④	NEW ELECTRICAL PANEL
⑤	NEW 15 AMP GFI OUTLET
⑥	THREE (3) NEW 2 AMP BREAKER (120 VAC)
⑦	THREE (3) NEW NEC CLASS 3, 100 WATT 1:1, 120 VAC TRANSFORMERS

ITEM	COMPONENT
⑧	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS. SEE SHEET E-19 FOR CABINET DRAWER LAYOUT.
⑨	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
⑩	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
⑪	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION

NOTE: CABINET AND EQUIPMENT TO MEET CALTRANS TEES REQUIREMENTS





COMPUTER ROOM

SHEET NOTES:

1. ANY EXISTING FURNITURE REQUIRED TO BE RE-ARRANGED FOR PLACEMENT OF CMS EQUIPMENT RACK SHALL BE COORDINATED WITH LIEUTENANT.
2. SECURE CONDUIT USING CONDUIT CLAMPS OR CHANNEL STRUTS. SEE SHEET E-18 FOR TYP CONDUIT MOUNTING.
3. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
4. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS (I.E., TRANSFORMERS, BREAKERS, ETC.).
5. NEW IP ADDRESSABLE POWER STRIP TO BE RACK MOUNTABLE.
6. CONTRACTOR TO CONNECT THREE (3) LANES TO ONE (1) TRANSFORMER, TWO (2) LANES TO ONE (1) TRANSFORMER, AND TWO (2) LANES TO THE OTHER TRANSFORMER.
7. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.
8. CONTRACTOR TO CONNECT THREE (3) LANES TO ONE (1) 2 AMP BREAKER, TWO (2) LANES TO ONE (1) 2 AMP BREAKER, AND TWO (2) LANES TO THE OTHER 2 AMP BREAKER.

CMS EQUIPMENT RACK LAYOUT FOR LANES 6-12 (CARQUINEZ BRIDGE)

NO SCALE

E-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	43	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

RAMSEY J. HISSEN, No. C-39608, Exp. 12/31/10, CIVIL, REGISTERED PROFESSIONAL ENGINEER, STATE OF CALIFORNIA

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SHEET	OF
10	19

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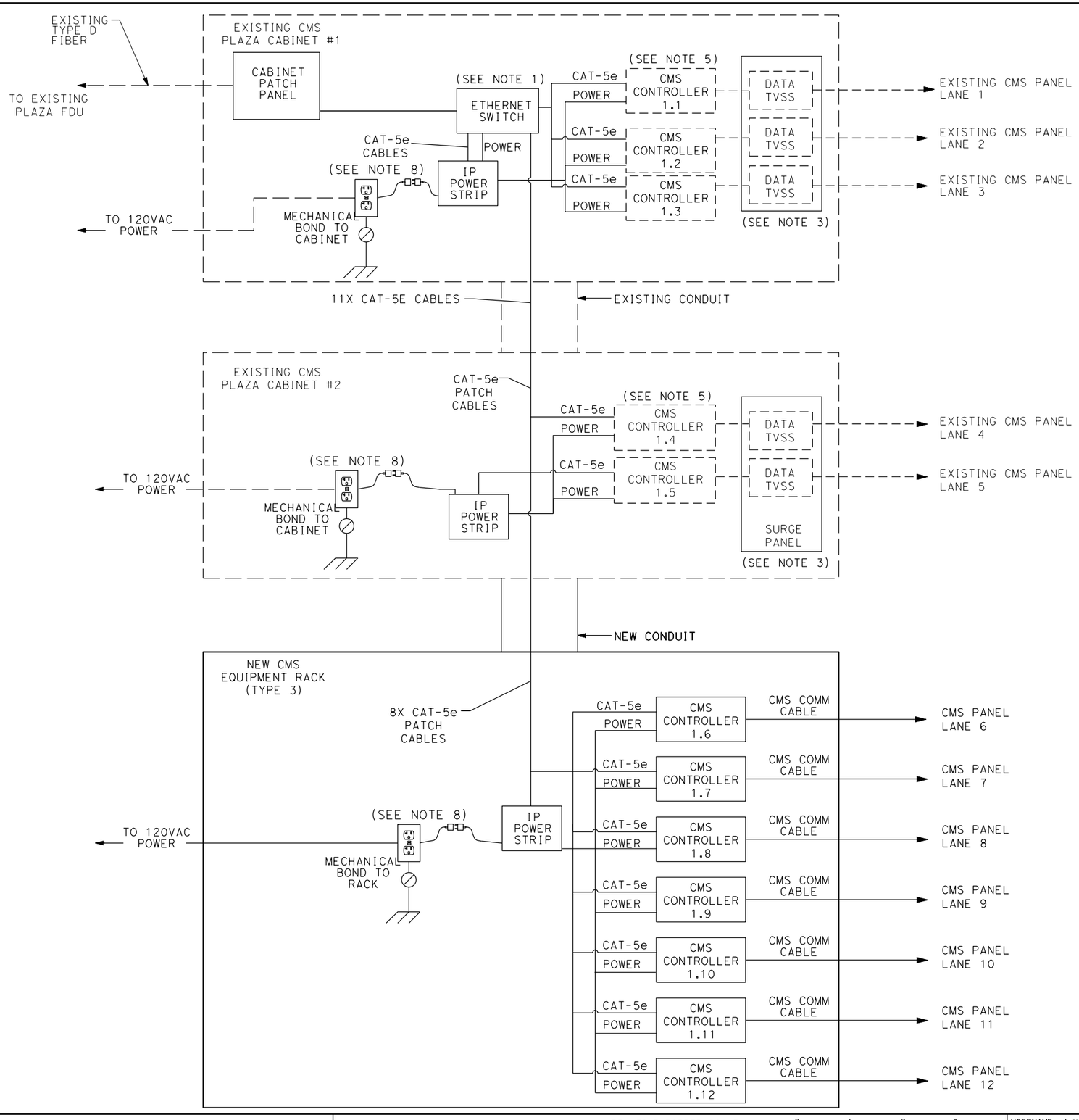

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	44	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp.12/31/10 CIVIL — STATE OF CALIFORNIA

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SAN JOSE, CA 95113

NOTES:

1. REPLACE EXISTING GARRETCOM ETHERNET SWITCH IN CMS PLAZA CABINET #1 WITH NEW RACK MOUNTABLE SWITCH WITH MINIMUM 14 10/100 MBPS PORTS AND 2 FIBER 100 MBPS PORTS.
2. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
3. CONTRACTOR TO REMOVE AND SALVAGE EXISTING TVSS. OLD TVSS SHALL BE RETURNED TO BATA.
4. SEE SHEET E-5 FOR CMS CABINET LOCATIONS.
5. EXISTING CMS CONTROLLERS LOCATED IN EXISTING PLAZA CABINETS 1 AND 2 (LANES 1-5) SHALL BE REPLACED WITH NEW CMS CONTROLLERS TO BE PROVIDED WITH INTERNAL SURGE PROTECTION PER MANUFACTURER'S SPECS.
6. CONTRACTOR SHALL COORDINATE CLOSELY WITH BATA ON RE-CONFIGURATION OF CMS ETHERNET SWITCHES AND NETWORK OPERATIONS.
7. CONTRACTOR TO FIELD VERIFY THAT ALL TX/RX PORTS ARE MATCHED FOR PROPER OPERATIONS THROUGHOUT CMS NETWORK.
8. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.

CMS PLAZA CABINET WIRING SCHEMATIC FOR LANES 1-12 (CARQUINEZ BRIDGE)

NO SCALE

E-11

SHEET	OF
11	19

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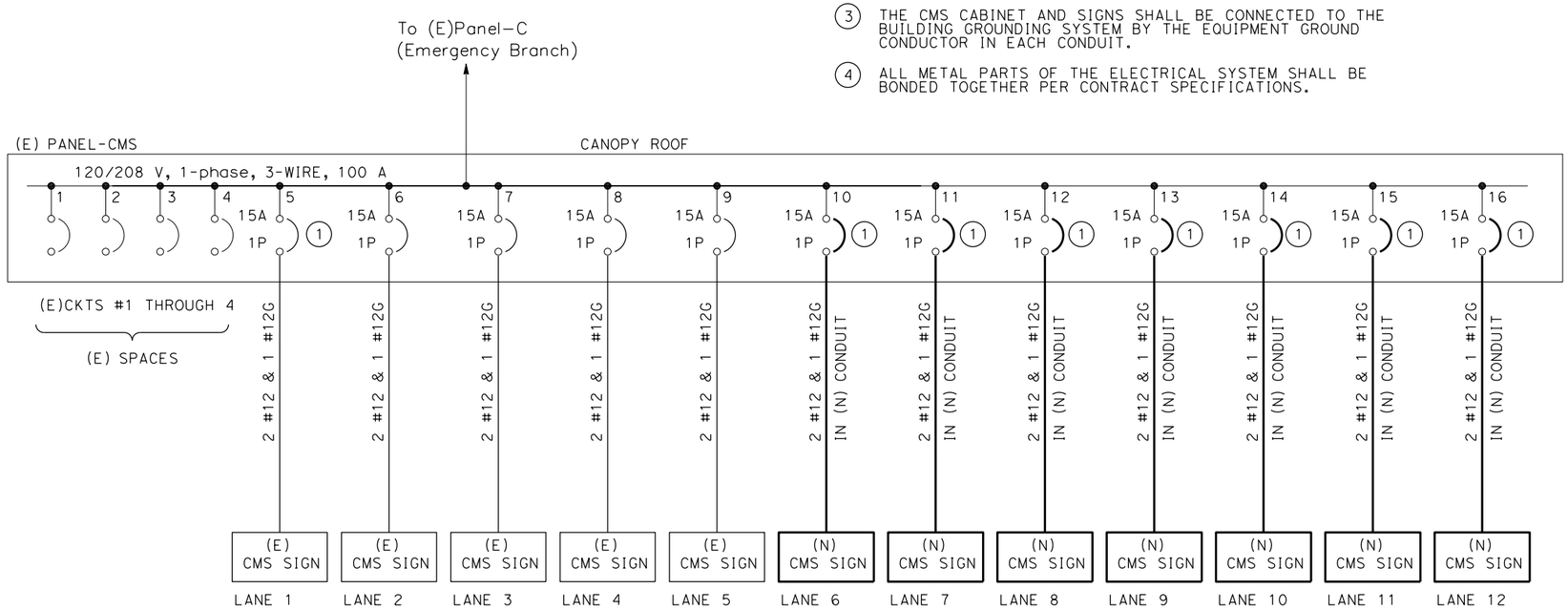
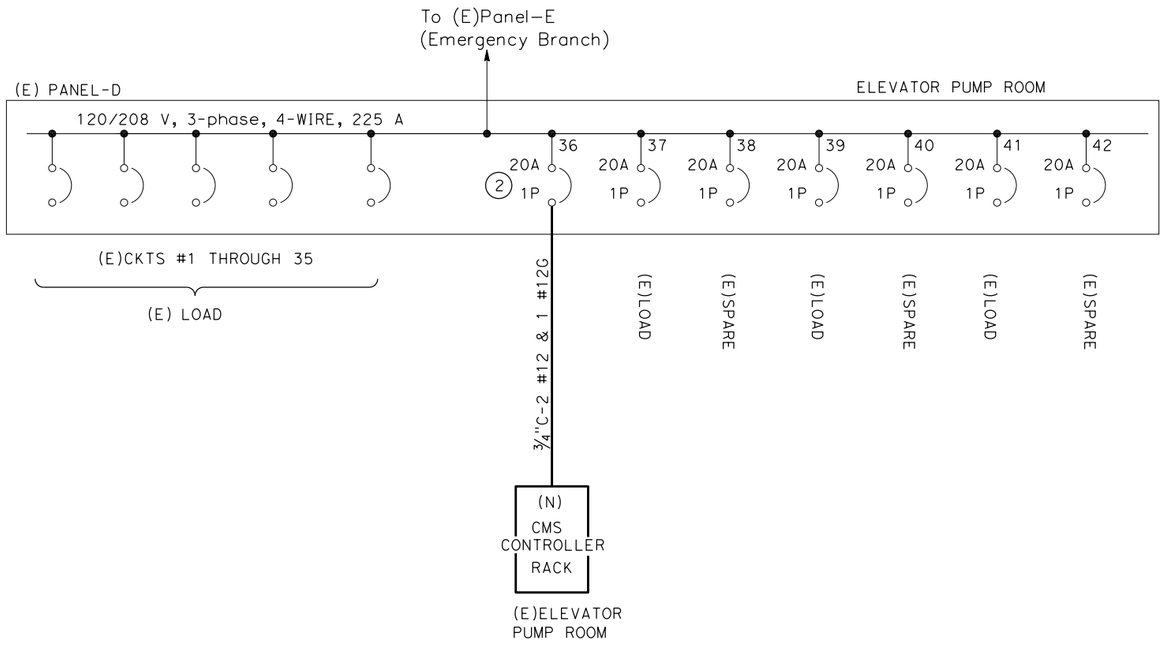
NOTES:

1. INSTALL NEW CIRCUIT BREAKER IN EXISTING SPACE.
2. CONNECT NEW BRANCH CIRCUIT TO EXISTING CIRCUIT BREAKER.
3. THE CMS CABINET AND SIGNS SHALL BE CONNECTED TO THE BUILDING GROUNDING SYSTEM BY THE EQUIPMENT GROUND CONDUCTOR IN EACH CONDUIT.
4. ALL METAL PARTS OF THE ELECTRICAL SYSTEM SHALL BE BONDED TOGETHER PER CONTRACT SPECIFICATIONS.





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	45	123

Carol Light
REGISTERED CIVIL ENGINEER — 3/12/10 DATE

REGISTERED PROFESSIONAL ENGINEER
CAROL LIGHT
No. 10145
Exp. 09/30/11
ELECTRICAL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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PARTIAL ONE LINE DIAGRAM (CARQUINEZ BRIDGE)

NO SCALE

E-12

SHEET	OF
12	19

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	46	123

Carol Light
REGISTERED CIVIL ENGINEER

3/12/10
DATE

REGISTERED PROFESSIONAL ENGINEER
CAROL LIGHT
No. 10145
Exp. 09/30/11
ELECTRICAL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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NOTES:

(1) CONTRACTOR TO UPDATE BREAKER PANEL BOARD SCHEDULE AND PROVIDE A NEW TYPED WRITTEN PANEL BOARD SCHEDULE.

(E) PANEL- D

PROJECT: BATA TO#12 TOLL PLAZA CMS INSTALLATION

LOCATION: CARQUINEZ BRIDGE ELEV. PUMP ROOM

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(E) TUNNEL LIGHTS				20	1	1	A	2	20	1				(E) PROGRAMMBLE LOGIC CONTROL
(E) TUNNEL LIGHTS				20	1	3	B	4	20	1				(E) CO MONITOR
(E) TUNNEL LIGHTS				20	1	5	C	6	20	1				(E) BLOWER/DAMPER CONTROL
(E) LTG CONTACTOR (EXT LTS)				20	1	7	A	8	20	1				(E) BLOWER/DAMPER NO. 1
(E) EXTERIOR LTS- EAST				20	1	9	B	10	20	1				(E) BLOWER/DAMPER NO. 2
(E) EXTERIOR LTS- NORTH				20	1	11	C	12	20	1				(E) BLOWER/DAMPER NO. 3
(E) EXTERIOR LTS- SOUTH				20	1	13	A	14	20	1				(E) RADIANT HEATER- MACH. RM.
(E) EXTERIOR LTS- WEST				20	1	15	B	16	20	1				(E) SUMP PUMP- ELEV. PIT
(E) GUARD RAIL LIGHTS				20	1	17	C	18	20	1				(E) LT/REC/FAN- MACH. RM.
(E) ADMIN BLD SIGN				20	1	19	A	20	20	1				(E) TV CAMERA
(E) ABUTMENT LTS				20	1	21	B	22	20	1				(E) BOOTH 10- LTS & HTR
(E) LTG CONTACTOR- LTS				20	1	23	C	24	20	1				(E) BOOTH 11- LTS & HTR
(E) BOOTH 1- LT & HTR				20	1	25	A	26	20	1				(E) BOOTH 12- LTS & HTR
(E) BOOTH 2- LT & HTR				20	1	27	B	28	20	1				(E) RECEPTACLE- ELEV. PUMP RM.
(E) BOOTH 3- LT & HTR				20	1	29	C	30	20	1				(E) SUMP PUMP
(E) BOOTH 4- LT & HTR				20	1	31	A	32	20	1				(E) SUMP PUMP
(E) BOOTH 5- LT & HTR				20	1	33	B	34	20	1			1.00	(E) CMS PLAZA CAB
(E) BOOTH 6- LT & HTR				20	1	35	C	36	20	1			1.00	(N) CMS EQIPMENT RACK
(E) BOOTH 7- LT & HTR				20	1	37	A	38	20	1				(E) SPARE
(E) BOOTH 8- LT & HTR				20	1	39	B	40	20	1				(E) SPARE
(E) BOOTH 9- LT & HTR				20	1	41	C	42	20	1				(E) SPARE
TOTALS SECTION 1	0.00	0.00	0.00								0.00	0.00	2.00	

VOLTAGE: 120/208V	LOAD SUMMARY			BALANCE:	(KVA)	%	AMPS:	ADDITIONAL FEATURES:
PHASE/WIRE: 3 PHASE / 4 WIRE	CONNECT LOAD	DEMAND FACTOR	DEMAND LOAD	PHASE A:	0.00	0.00	0.00	
RATING:	0.00	125% OF LOAD	0.00	PHASE B:	1.00	50.00	2.78	
225A	0.00	NEC 220-13	0.00	PHASE C:	1.00	50.00	2.78	
MAINS:	2.00	1.00	2.00					
MAIN LUG ONLY								
MOUNTING:	2.00 KVA		2.00 KVA					
	5.6 AMPS		5.6 AMPS					
A.I.C.:								
BUS SIZE:								S&L JOB #: 28016

(E) PANEL- CMS

PROJECT: BATA TO#12 TOLL PLAZA CMS INSTALLATION

LOCATION: CARQUINEZ BRIDGE CANOPY ROOF

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(E) SPACE					1	1	A	2		1				(E) SPACE
(E) SPACE					1	3	B	4		1				(E) SPACE
(E) CMS SIGN- LN 1			0.50	15	1	5	A	6	15	1				(E) CMS SIGN- LN 4
(E) CMS SIGN- LN 2			0.50	15	1	7	B	8	15	1				(E) CMS SIGN- LN 5
(E) CMS SIGN- LN 3			0.50	15	1	9	A	10	15	1				(N) CMS SIGN- LN 9
(N) CMS SIGN- LN 6			0.50	15	1	11	B	12	15	1				(N) CMS SIGN- LN 10
(N) CMS SIGN- LN 7			0.50	15	1	13	A	14	15	1				(N) CMS SIGN- LN 11
(N) CMS SIGN- LN 8			0.50	15	1	15	B	16	15	1				(N) CMS SIGN- LN 12
TOTALS SECTION 1	0.00	0.00	3.00								0.00	0.00	0.00	

VOLTAGE: 120/208V	LOAD SUMMARY			BALANCE:	(KVA)	%	AMPS:	ADDITIONAL FEATURES:
PHASE/WIRE: 1 PHASE, 3 WIRE								NEMA 3R
RATING:	CONNECT LOAD	DEMAND FACTOR	DEMAND LOAD	PHASE A:	1.50	50.00	7.21	
100 A				PHASE B:	1.50	50.00	7.21	
MAINS:	0.00	125% OF LOAD	0.00					
MAIN LUG ONLY	0.00	NEC 220-13	0.00					
MOUNTING:	3.00	1.00	3.00					
SURFACE								
A.I.C.:	3.00 KVA		3.00 KVA					
	14.4 AMPS		14.4 AMPS					
BUS SIZE:								S&L JOB #: 28016

D AND CMS PANELBOARD SCHEDULES (CARQUINEZ BRIDGE)

NO SCALE

E-13

SHEET	OF
13	19

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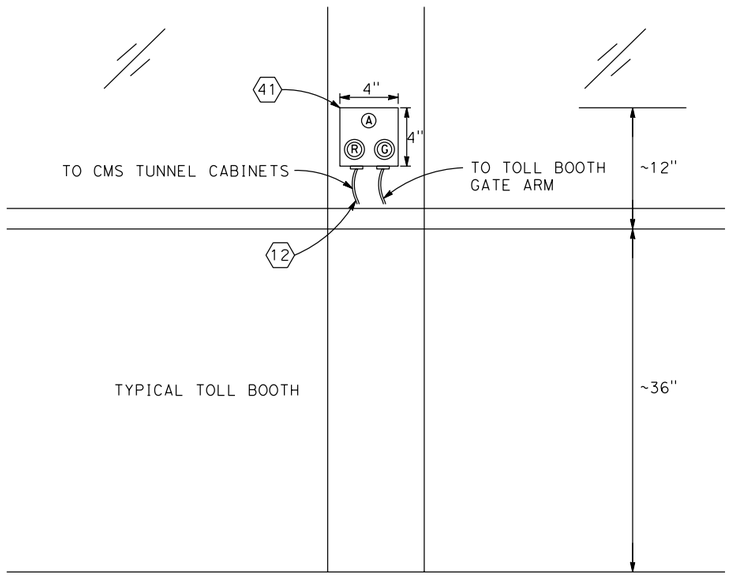


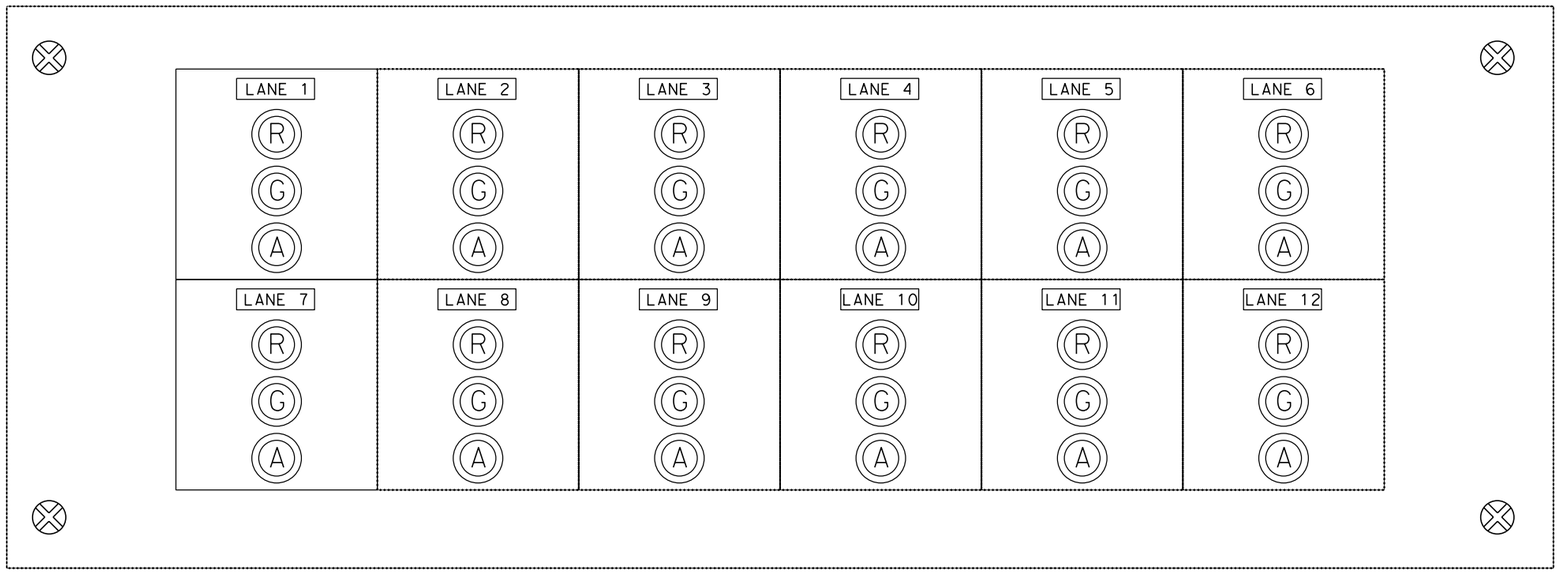
NEW TOLL BOOTH INDICATOR LIGHT SWITCH BOX

LEGEND

- (R) PANEL MOUNT MOMENTARY RED LED ILLUMINATED PUSH BUTTON SWITCH
- (G) PANEL MOUNT MOMENTARY GREEN LED ILLUMINATED PUSH BUTTON SWITCH
- (A) PANEL MOUNT MOMENTARY AMBER LED ILLUMINATED PUSH BUTTON SWITCH
- (A) AMBER INDICATOR LED LIGHT

NOTES:

1. SIZE OF CONSOLE SWITCH PANEL WILL BE FIELD DETERMINED BY CONTRACTOR TO ACCOMMODATE NUMBER OF LANES.
2. SEE SHEET E-3 FOR LOCATION OF SWITCH CONSOLE PANEL.
3. SEE SHEETS E-15 TO E-16 FOR PROPOSED WIRING CONFIGURATION.
4. CONTRACTOR TO LABEL PUSH BUTTON SWITCH WITH R, G, AND A LETTERS FOR RED, GREEN, AND AMBER LANE INDICATION.



NEW INDICATOR LIGHT SWITCH CONSOLE PANEL

INDICATOR LIGHT SWITCH CONSOLE PANEL AND TOLL BOOTH INDICATOR SWITCH BOX (CARQUINEZ BRIDGE)

NO SCALE

E-14

SHEET	OF
14	19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	47	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	48	123

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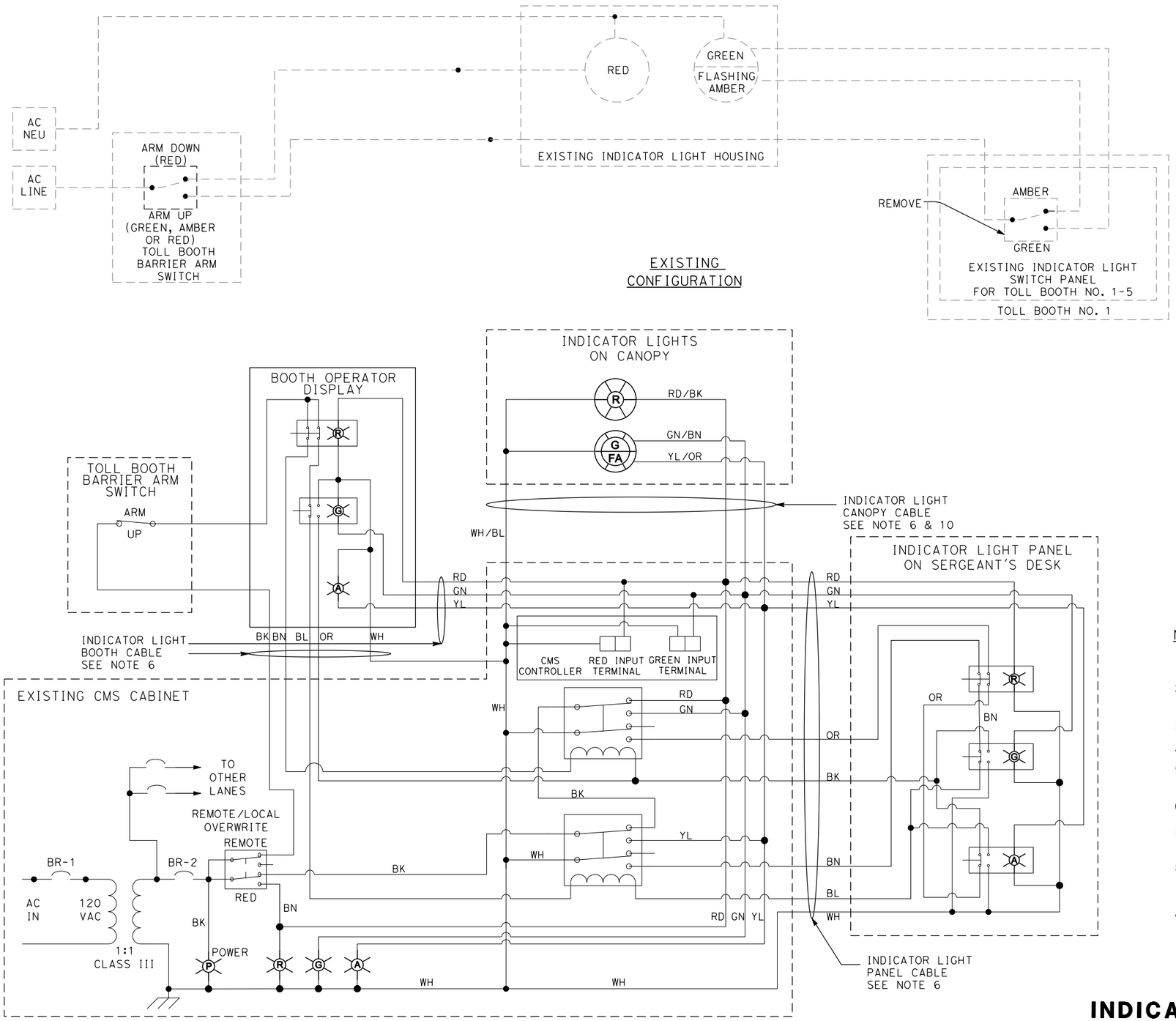

LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 ½ AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 8)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)

NOTES:

1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-14 FOR INDICATOR LIGHT SWITCH CONSOLE DETAIL.
3. INTERCEPT EXISTING GATE ARM CABLE IN TOLL BOOTH.
4. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP.
5. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
6. BELDEN 5506UE CABLE OR APPROVED EQUIVALENT.
7. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
8. ONE (1) ½ AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) ½ AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 CMS CONTROLLERS.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHTS ON CANOPY.

INDICATOR LIGHT WIRING DIAGRAM FOR LANES 1-5 (CARQUINEZ BRIDGE)

E-15

NO SCALE

SHEET	OF
15	19

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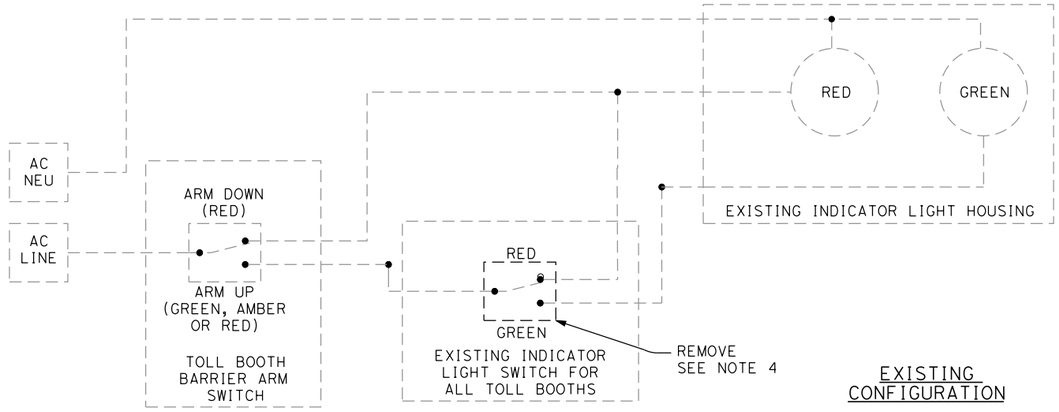
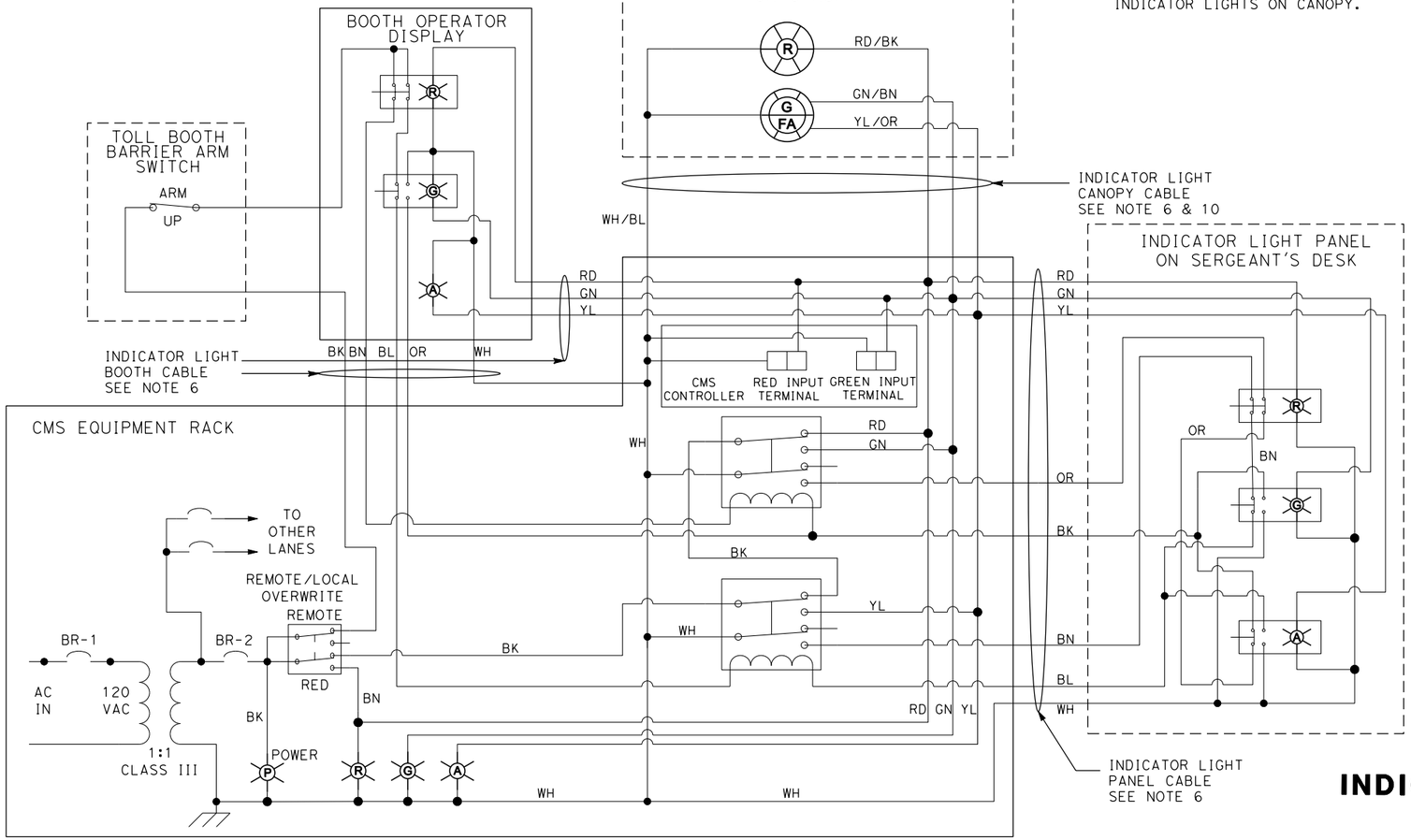


EXISTING CONFIGURATION



PROPOSED CONFIGURATION

NOTES:

1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-14 FOR INDICATOR LIGHT SWITCH CONSOLE DETAIL.
3. INTERCEPT EXISTING GATE ARM CABLE IN TOLL BOOTH.
4. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP. ONE TRANSFORMER PER CMS CABINET.
5. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
6. BELDEN 5506UE CABLE OR APPROVED EQUIVALENT.
7. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
8. ONE (1) ½ AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) ½ AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 CMS CONTROLLERS.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHTS ON CANOPY.

LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- [•] CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 ½ AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 8)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	49	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

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INDICATOR LIGHT WIRING DIAGRAM FOR LANES 6-12 (CARQUINEZ BRIDGE)

NO SCALE

E-16

SHEET	OF
16	19

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04	Sol	80	0.63	50	123

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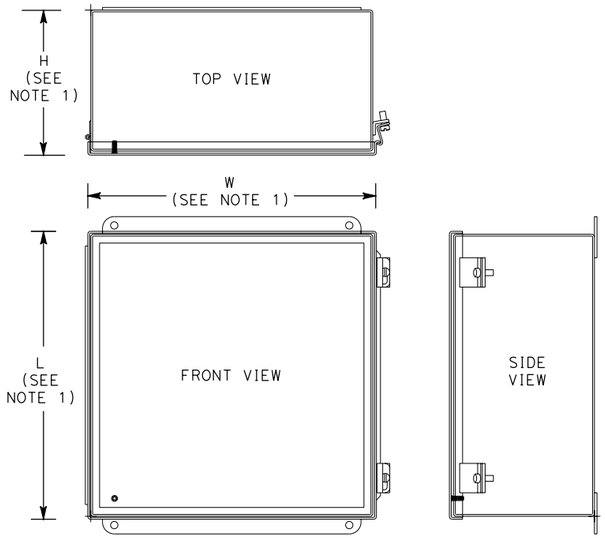
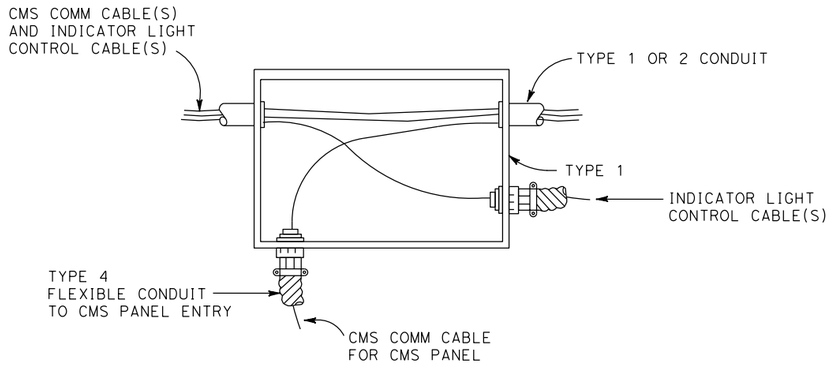
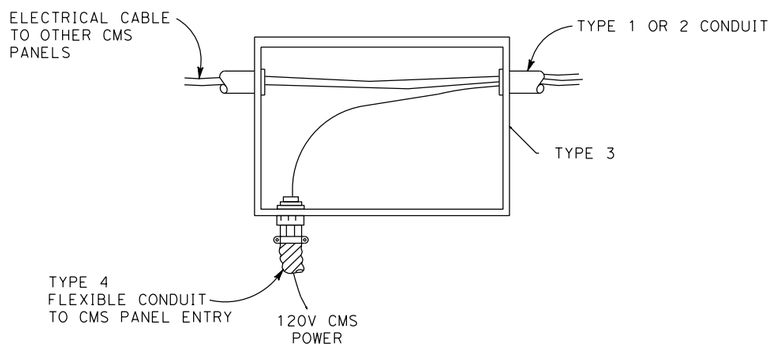


NEMA 4X JUNCTION BOX
(SHOWN WITH HINGE)





NOTES:

1. TYPE 1 NEMA 4X JUNCTION BOX (12"L X 12"W X 6"D, TYP.) OR AS REQ'D.
   TYPE 3 NEMA 4X JUNCTION BOX (5"L X 6"W X 4"D, TYP.) OR AS REQ'D.
2. MINIMUM SIZES OF JUNCTION BOXES SHOWN. CONTRACTOR SHALL CONFIRM SIZES AND QUANTITIES IN FIELD AND SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.
3. FOR JUNCTION BOX MOUNTED ON EXISTING CONCRETE WALLS OR SURFACE FLOOR MOUNTED USE ⅜" EXPANSION ANCHORS, TOTAL OF 4 FOR EACH BOX.
4. COIL A MINIMUM OF 3' OF CABLE FOR EACH DEVICE IN THE TYPE 1 AND TYPE 3 JUNCTION BOXES.

JUNCTION BOX DETAILS (CARQUINEZ BRIDGE)

NO SCALE

E-17

SHEET	OF
17	19

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04	Sol	80	0.63	51	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

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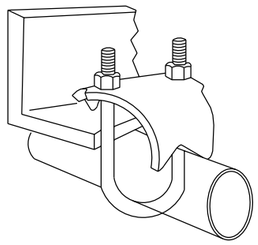
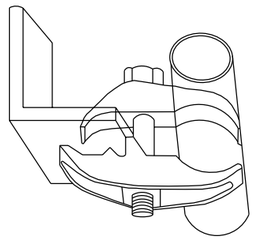
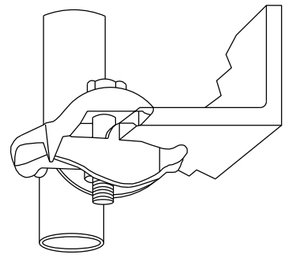


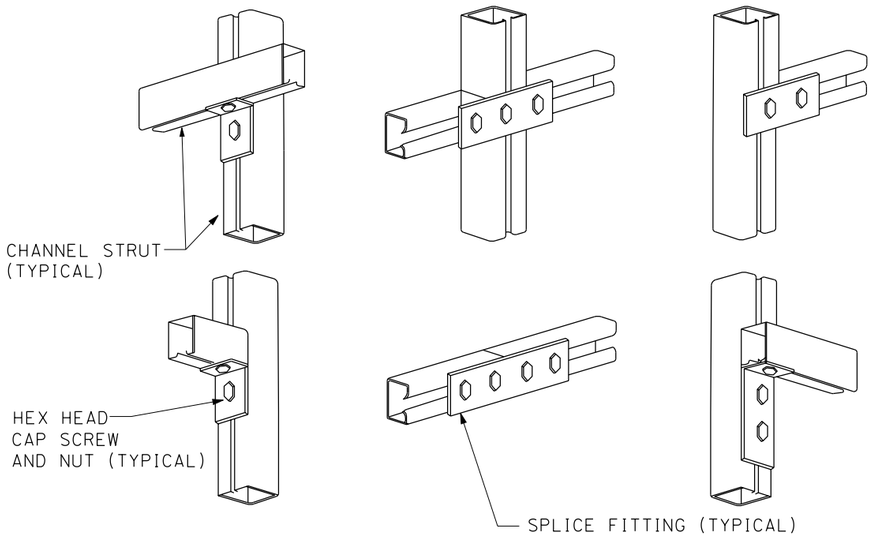
FOR MOUNTING PIPES OR CONDUIT AT RIGHT ANGLES TO THE BEAM DETAIL



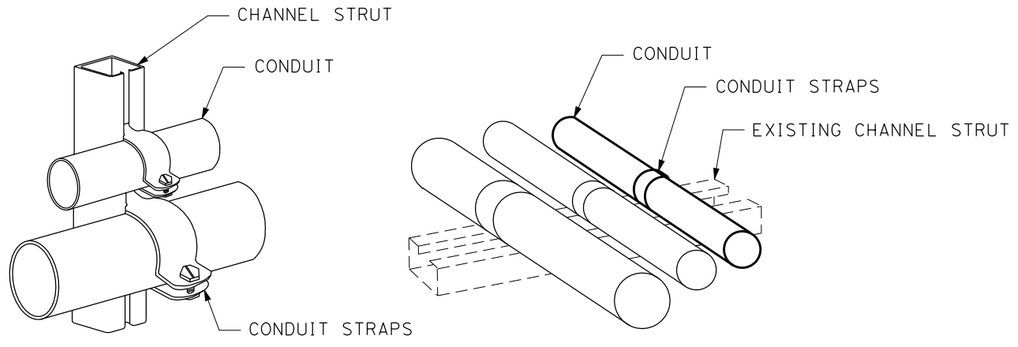
FOR MOUNTING PIPES OR CONDUIT PARALLEL TO THE BEAM DETAIL



FOR MOUNTING PIPES OR CONDUIT VERTICALLY ACROSS BEAM EDGE DETAIL



TYPICAL EQUIPMENT SUPPORT CHANNEL, FITTINGS AND FASTENERS



MOUNTING ON STRUT DETAILS

CONDUIT MOUNTING AND ATTACHMENT DETAILS (CARQUINEZ BRIDGE)

NO SCALE

E-18

SHEET	OF
18	19

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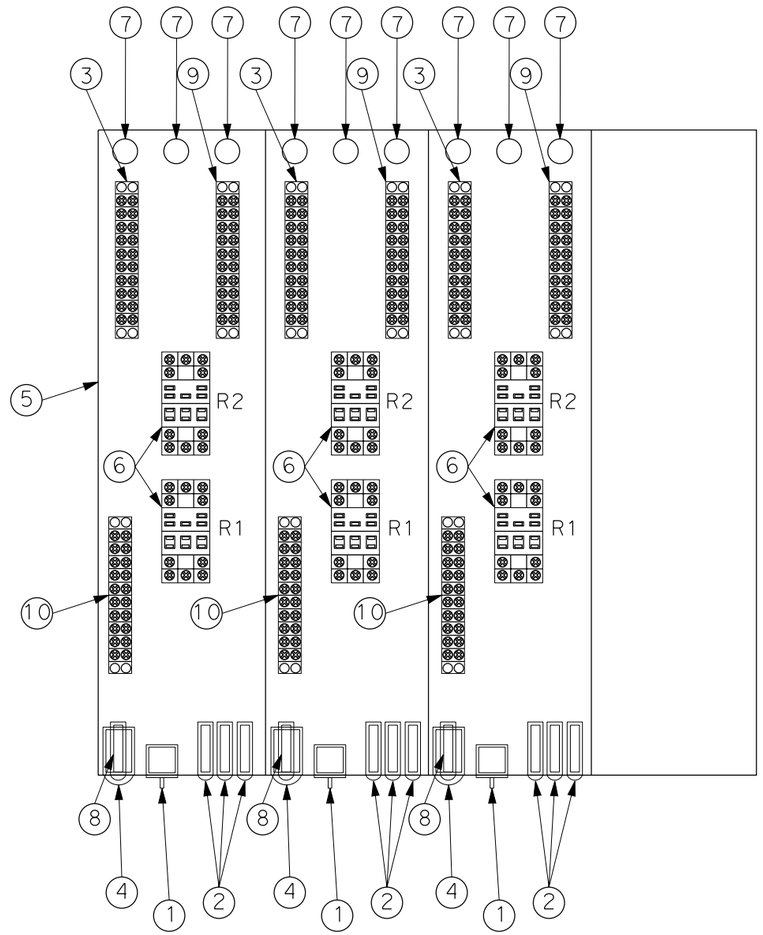
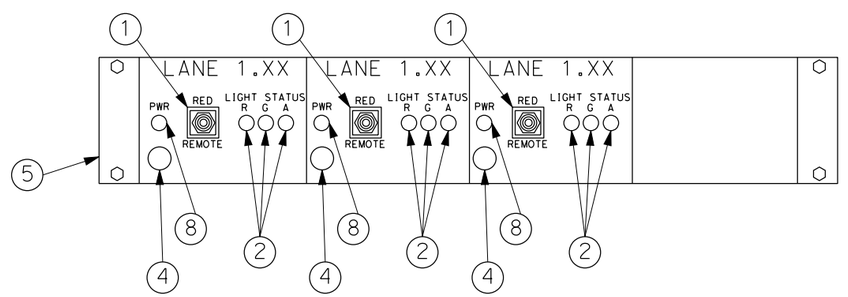
ITEM	COMPONENT
1	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
2	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
3	TERMINAL BLOCKS FOR INDICATOR LIGHT CANOPY CABLE AND POWER
4	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
5	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS.
6	TWO (2) NEW DPDT RELAYS
7	DRILLED HOLES AT BOTTOM OF DRAWER FOR INDICATOR LIGHT CABLE
8	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION
9	TERMINAL BLOCKS FOR INDICATOR LIGHT BOOTH CABLE
10	TERMINAL BLOCKS FOR INDICATOR LIGHT PANEL CABLE

TOP VIEW



FRONT VIEW



NOTES:

1. ALL EQUIPMENT SHALL BE SECURED. NO EQUIPMENT WILL BE LAYING IN BOTTOM OF CABINET. INSTALLATION SHALL BE NEAT, DRESSED AND ACCORDING TO THE PLANS.
2. CONTRACTOR SHALL SUBMIT MATERIAL SUBMITTALS FOR ALL CABINET COMPONENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
3. INDICATOR LIGHT CABLES TO BE WIRED ACCORDING TO THE INDICATOR LIGHT WIRING DIAGRAMS AS SHOWN ON SHEETS E-15 TO E-16.
4. INDICATOR LIGHT DRAWER LAYOUT SHOWN FOR TYPICAL CMS CABINET.
5. ROUTE ALL CABLES THROUGH DRILLED HOLES AT BOTTOM OF DRAWER. INCLUDE PLASTIC GROMMETS IN HOLE.
6. TERMINATE ALL CABLES ON NEW TERMINATION BLOCKS.
7. FASTEN ALL CABLES TO DRAWER TO PREVENT STRAINING ON TERMINATION BLOCKS.
8. EACH CABINET DRAWER SHALL BE DESIGNED TO ACCOMMODATE UP TO FOUR (4) INDICATOR CONTROL LANES.
9. CONTRACTOR TO LEAVE AT LEAST ONE RACK UNIT OF SPACE BETWEEN DRAWER AND BOTTOM OF CABINET.

INDICATOR LIGHT CABINET DRAWER LAYOUT (CARQUINEZ BRIDGE)

NO SCALE

E-19

SHEET	OF
19	19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80	0.63	52	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

RAMSEY J. HISSEN No. C-39608 Exp. 12/31/10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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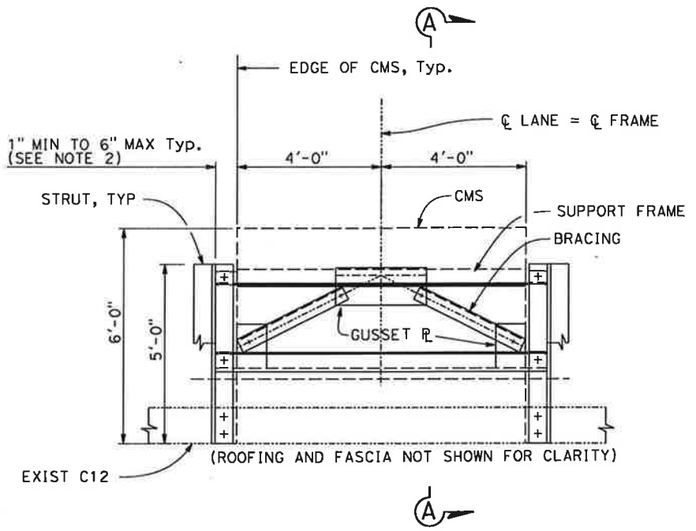
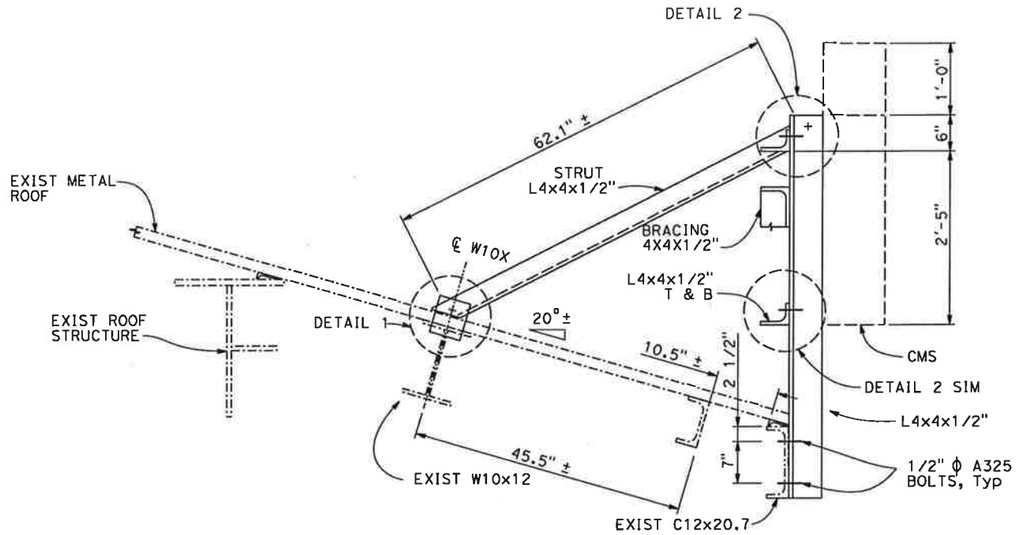


CMS SUPPORT FRAME ELEVATION

SCALE: 1/2" = 1'-0"



SECTION A-A

SCALE: 1" = 1'-0"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	Ala	84	R3.21	53	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

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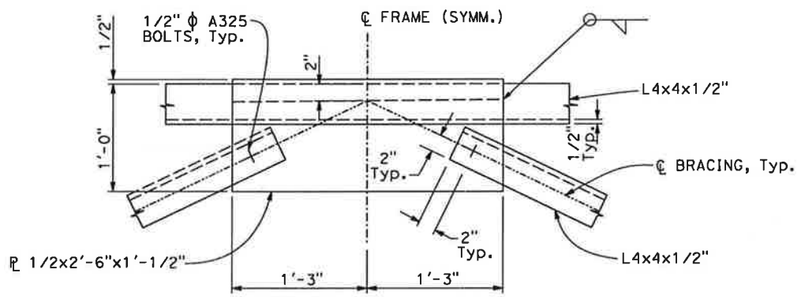
MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831

LEGEND:

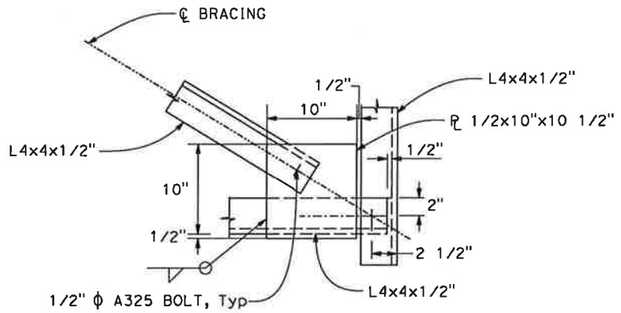
——— INDICATES NEW STRUCTURE

- - - - - INDICATES EXIST STRUCTURE



TOP GUSSET PLATE DETAIL

SCALE: 1 1/2" = 1'-0"



BOTTOM GUSSET PLATE DETAIL

SCALE: 1 1/2" = 1'-0"

NOTES:

1. FOR NUMBER AND LOCATION OF CMS PANELS, SEE LAYOUT SHEET L-7.
2. DISTANCE FROM EDGE OF CMS TO EDGE OF FRAME MAY BE ADJUSTED AND DETERMINED IN THE FIELD SUCH THAT STRUT MEMBERS WILL BE ALIGNED WITH A VALLEY OF EXISTING CORROGAGETED SHEET METAL AND TO ENSURE THAT FRAME WILL BE WIDE ENOUGH FOR OCNNECTION TO CMS ATTACHMENT.
3. ALL STEEL MEMBERS SHALL BE GALVANIZED.
4. ALL BOLTS, WASHERS AND LOCK NUTS SHALL BE OF STAINLESS STEEL OR GALVANIZED.

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT		DESIGN	BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER	BRIDGE NO.
SIGN OFF DATE		DETAILS	BY E. Garnica	CHECKED			POST MILE R3.21
		QUANTITIES	BY	CHECKED		CU EA	

DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 03/12/10

DUMBARTON TOLL PLAZA

CMS SUPPORT DETAILS

SHEET S-1

SHEET 1 OF 3

FILE => ...\Structural\Structual_CMS-1.dgn

USERNAME => Florin_Lo PLOTTED => 3/12/2010 TIME PLOTTED => 9:58:05 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84	R3.21	54	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

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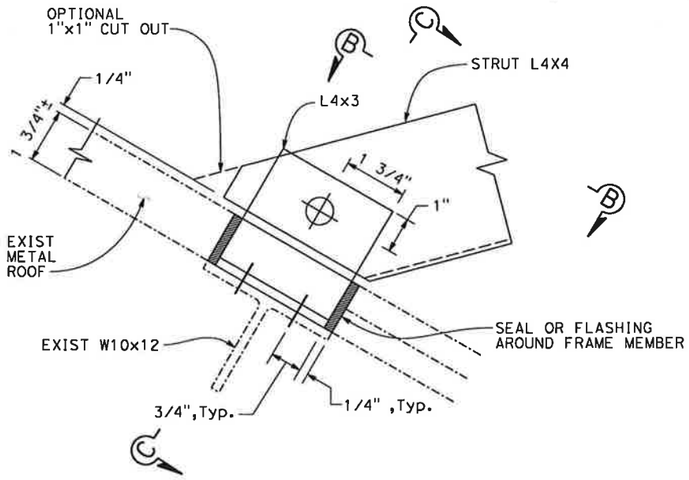
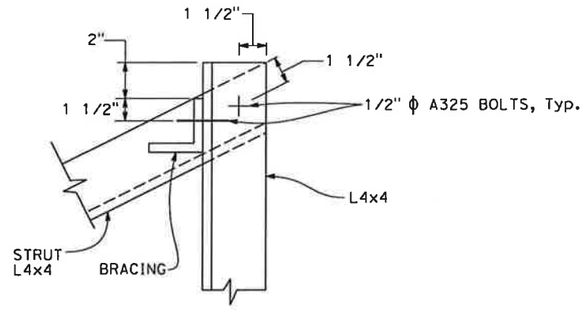
101 EIGHTH STREET
OAKLAND, CALIFORNIA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



DETAIL 1
SCALE: 6" = 1'-0"



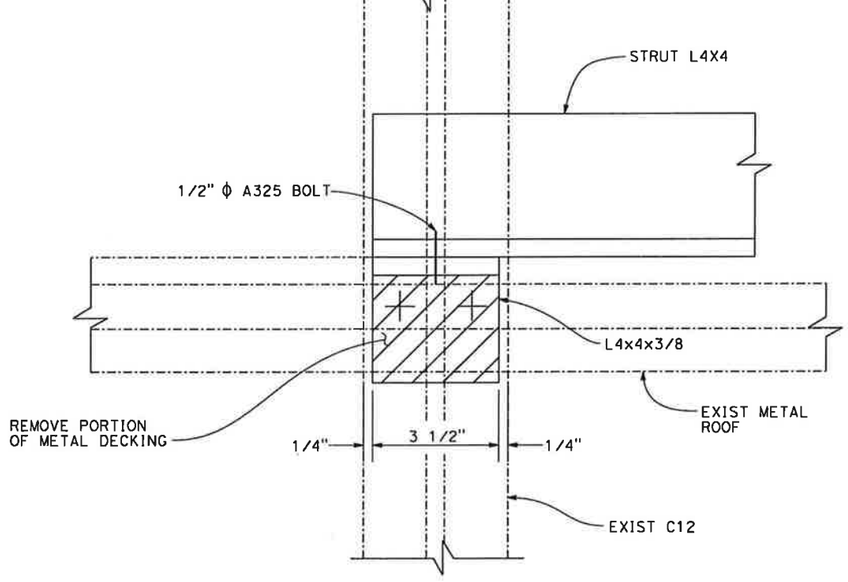
DETAIL 2 (CMS NOT SHOWN)
SCALE: 3" = 1'-0"

LEGEND:

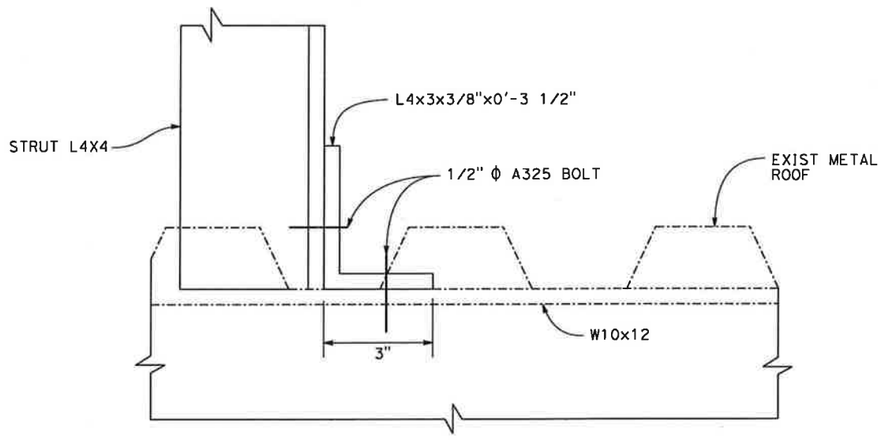
——— INDICATES NEW STRUCTURE

- - - - - - INDICATES EXIST STRUCTURE

▨ INDICATES REMOVAL OF PORTION OF EXUST FRAME



SECTION B-B
SCALE: 6" = 1'-0"



SECTION C-C
SCALE: 6" = 1'-0"

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

NOTE:

PARTIAL REMOVAL OF ROOTING AND FASCIA WILL BE NECESSARY FOR INSTALLATION OF SUPPORT FRAME. THE ROOFING AND FASICAL SHALL BE REINSTATED AFTER INSTALLATION OF SUPPORT FRAME.

DESIGN OVERSIGHT / SIGN OFF DATE		DESIGN BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER	BRIDGE NO.	DUMBARTON TOLL PLAZA CMS SUPPORT DETAILS	SHEET S-2
		DETAILS BY E. Garnica	CHECKED			POST MILE R3.21		
		QUANTITIES BY	CHECKED		CU EA	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES (PRELIMINARY STAGE ONLY) 03/12/10	SHEET 2 OF 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)

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REGISTERED CIVIL ENGINEER — 3/12/10 DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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7415 GREENHAVEN DRIVE, SUITE 100
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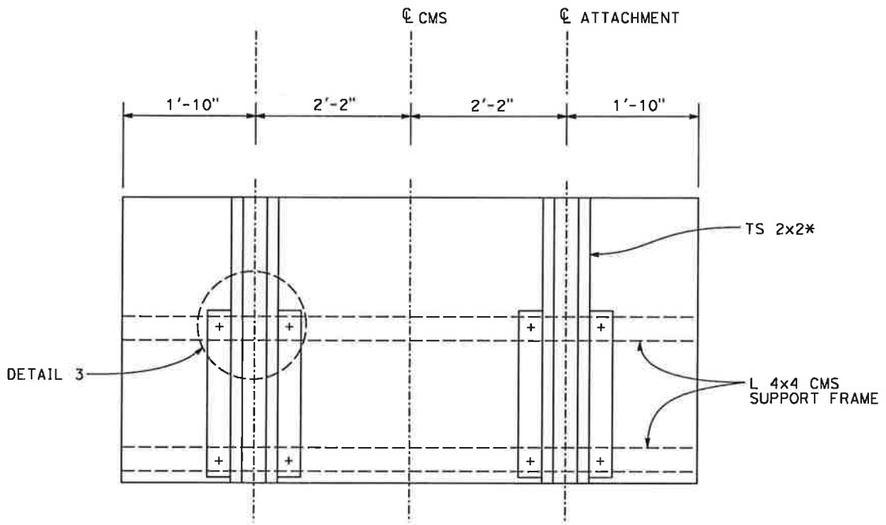
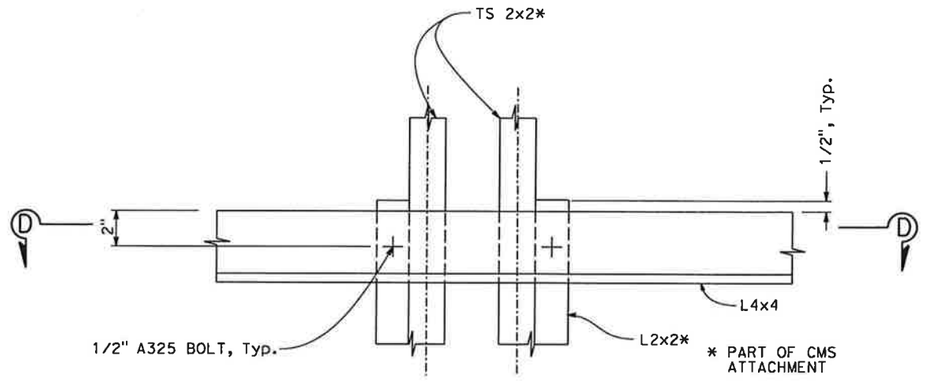


* PART OF CMS ATTACHMENT

BACK VIEW OF CMS

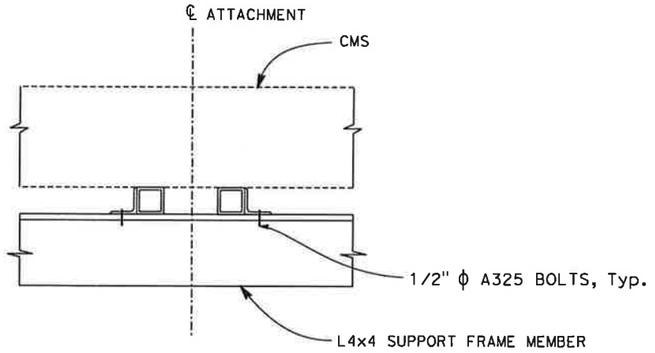
SCALE:1" = 1'-0"



* PART OF CMS ATTACHMENT

DETAIL 3

SCALE: 3" = 1'-0"



SECTION D-D

SCALE: 3" = 1'-0"

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

NOTE:

POSITION OF BOLT HOLES SHALL BE FIELD MEASURED PRIOR TO BEING DRILLED OR OVERSIZED HOLES SHALL BE USED.

DESIGN OVERSIGHT / SIGN OFF DATE		DESIGN	BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER	BRIDGE NO.
		DETAILS	BY E. Garnica	CHECKED			POST MILE R3.21
		QUANTITIES	BY	CHECKED		CU EA	DISREGARD PRINTS BEARING EARLIER REVISION DATES →

DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

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DUMBARTON TOLL PLAZA
CMS SUPPORT DETAILS

SHEET S-3

REVISION DATES (PRELIMINARY STAGE ONLY): 03/12/10

SHEET 3 OF 3

USERNAME => Florin_Lo DATE PLOTTED => 3/12/2010 TIME PLOTTED => 9:59:17 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	56	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp.12/31/10 — CIVIL — STATE OF CALIFORNIA

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OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE LATEST VERSION OF THE CALTRANS STANDARD PLAN AND SPECIFICATIONS.
2. CALL UNDERGROUND SERVICE ALERT 48 HOURS BEFORE EXCAVATION U.S.A. (800) 277-2600.
3. ALL ELECTRICAL AND CMS EQUIPMENT, INFRASTRUCTURE, LANDSCAPING OR BUILDINGS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. ALL ELECTRICAL AND CMS EQUIPMENT INCLUDING CONDUITS, JUNCTION AND SPLICE EQUIPMENT RACK ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER.
5. SERVICE EQUIPMENT, AND CMS CABINET ENCLOSURES, CONTROLLER ASSEMBLIES, CMS AND OTHER ELECTRICAL EQUIPMENT ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATION SHALL BE DETERMINED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
6. ALL EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHOWN ON THE PLANS IS FOR REFERENCE AND SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. LOCATIONS ARE APPROXIMATED. ANY DAMAGE TO THE EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.
7. NEW CIRCUIT BREAKERS TO BE INSTALLED TO EXISTING PANEL BOXES SHALL MATCH THE EXISTING TYPE OR APPROVED BY THE ENGINEER AS REQUIRED.
8. ALL DIMENSIONS INDICATED ARE TO BE VERIFIED IN FIELD PRIOR TO COMMENCING WORK.
9. THE CONTRACTOR SHALL IDENTITY AND VERIFY ALL EXISTING UTILITIES, POWER SOURCES AND POWER CONSUMPTIONS AS REQUIRED OR NEEDED AS SHOWN ON THE PLANS PRIOR TO COMMENCING WORK.
10. SEE STRUCTURAL PLANS FOR EXACT LOCATION OF CMS STRUCTURES, FRAMES AND MOUNTING BRACKETS.
11. ALL ABOVE GROUND CONDUIT SHALL BE SUPPORTED AT A MINIMUM OF EVERY 5 FEET.
12. ALL ELECTRICAL ITEMS THAT USE ANCHORS TO ATTACH TO THE CONCRETE STRUCTURES SHALL USE STAINLESS STEEL POWER STUD ANCHORS-THREADED VERSION SIZED PER MANUFACTURER RECOMMENDATION AND EPOXY ANCHOR HOLES USING SEALANT WITH A RATED LIFE OF 25 YEARS OR GREATER.
13. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE NEC & NATIONAL ELECTRICAL SAFETY CODE. ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER NEC REQUIREMENTS. ALL COMPONENTS INCLUDING CONDUITS JUNCTION BOXES, CABLING, EQUIPMENT, AND CABINETS SHALL BE CLEARLY LABELED WITH PROPER TAGS, NAME PLATES, AND I.D. LABELS.
14. CONTRACTOR SHALL USE TYPE 1 CONDUIT IN TUNNEL AND TRENCH, TYPE 2 CONDUIT FOR EXPOSED CONDITIONS AND TYPE 4 FLEXIBLE CONDUIT AS SHOWN ON PLANS.
15. ALL EXTERIOR PULL BOXES AND JUNCTION BOXES SHALL BE NEMA 4X.
16. ALL ELECTRICAL AND EXTERIOR CONNECTIONS SHALL BE WEATHERPROOF.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ANY EXISTING CONDUIT AND/OR JUNCTION BOXES TO BE USED ON THIS CONTRACT PRIOR TO PULLING NEW CABLE THROUGH. ANY DAMAGE TO NEW OR EXISTING CABLE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.

LEGEND:

- CHANGEABLE MESSAGE SIGN
- EXISTING CONDUIT
- EXISTING CONDUIT WITH NEW CABLE
- NEW CONDUIT
- JUNCTION BOX
- EXISTING JUNCTION BOX
- P# NEW CMS PLAZA CABINET
- P# EXISTING CMS PLAZA CABINET
- CONDUIT IN
- CONDUIT OUT
- X-Y LANE X TO LANE Y CABLES
- TERMINAL BLOCK
- fo EXISTING FIBER OPTIC CABLE
- EXISTING TRAFFIC SIGNAL INDICATOR
- QUAD RECEPTICAL
- DUPLEX RECEPTICAL
- S NEW INDICATOR LIGHT SWITCH CONSOLE PANEL
- RISER CONDUITS
- DROP CONDUITS
- NEW LED INDICATOR BOX
- S EXISTING INDICATOR LIGHT SWITCH

ABBREVIATIONS:

AM	AMBER
BK	BLACK
BL	BLUE
BN	BROWN
C	CONDUIT
CAB	CABINET
CEC	CALIFORNIA ELECTRICAL CODE
CMS	CHANGEABLE MESSAGE SIGN
COMM	COMMUNICATIONS
CPB	COMMUNICATIONS PULL BOX
CKT	CIRCUIT
E	EXISTING
ETC	ELECTRONIC TOLL COLLECTION
FDU	FIBER DISTRIBUTION UNIT
FO	FIBER OPTIC
GFI	GROUND FAULT INTERRUPT
GN	GREEN
ILB	INDICATOR LIGHT BOOTH
ILC	INDICATOR LIGHT CANOPY
ILP	INDICATOR LIGHT PANEL
J-BOX	JUNCTION BOX
JB	JUNCTION BOX
KVA	KILO-VOLT AMPERE
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT EMITTING DIODE
MLO	MAIN LUG ONLY
NEC	NATIONAL ELECTRICAL CODE
N	NEUTRAL (GROUNDED CONDUCTOR)
ORT	OPEN ROAD TOLLING
PB	CEILING/WALL MOUNTED PULL BOX
PCC	PORTLAND CEMENT CONCRETE
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
RMC	RIGID METAL CONDUIT
R#	RELAY (# = RELAY NUMBER)
RD	RED
SS	STAINLESS STEEL
TEES	TRANSPORTATION ELECTRICAL EQUIPMENT
SM	SINGLE MODE
TB	TERMINAL BLOCKS
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYPE A CABLE	36 SINGLE MODE FIBER OPTIC CABLE
TYPE D CABLE	12 SINGLE MODE FIBER OPTIC CABLE
TYPE 1 CONDUIT	GALVANIZED RIGID STEEL (GRS)
TYPE 2 CONDUIT	TYPE 1 CONDUIT COATED WITH PVC OR POLYETHYLENE
TYPE 4 CONDUIT	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
UPS	UNINTERRUPTIBLE POWER SUPPLY
XFMR	TRANSFORMER
YL	YELLOW

INDEX:

STANDARD NOTES:

- BC INSTALL PULL BOX IN EXISTING CONDUIT RUN.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- SC SPLICE NEW TO EXISTING CONDUCTORS.
- AB ABANDONED
- RD REMOVE AND DISPOSE
- RS REMOVE AND SALVAGE

WIRING DIAGRAM LEGEND:

- CB CIRCUIT BREAKER
- NB NEUTRAL BUS
- GB GROUND BUS
- ENCLOSURE BOND
- GROUNDING ELECTRODE
- CIRCUIT BREAKER
- R RECEPTACLE

GENERAL NOTES, LEGEND, ABBREVIATIONS AND INDEX OF DRAWINGS (DUMBARTON BRIDGE)

E-1

SHEET	OF
1	15

LAST REVISION 00-00-00 — DATE PLOTTED => $DATE — TIME PLOTTED => $TIME

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

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$FREQUEST

BORDER LAST REVISED 2/1/2008 — RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 — USERNAME => $USER — DGN FILE => $REQUEST — CU 00000 — EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	57	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

PROJECT NOTES:

1. INSTALL NEW TYPE D CABLE IN EXISTING CONDUIT.
2. INSTALL NEW TYPE D CABLE.
3. INSTALL (N) TYPE 1 JUNCTION BOX. MOUNT AND SECURE ON (E) TUNNEL CEILING.
4. INSTALL NEW THREE (3) 15A-1P CIRCUIT BREAKER IN (E) SPACES 14, 16 AND 18 (120V CMS SIGNS).
5. INSTALL NEW ONE (1) 15A-IP CIRCUIT BREAKER FOR NEW CMS CABINET #3 IN (E) SPACE 20.
6. INSTALL NEW TYPE 1 (¾" C) CONDUIT WITH 2 #14 AND 1 #14G (120 V, CMS CABINET #3) AND PROVIDE CONDUIT SUPPORT.
7. INSTALL NEW TYPE 1 (1" C) CONDUIT.
8. INSTALL TYPE 3 JUNCTION BOX BELOW CANOPY AS SPECIFIED IN CONTRACT DOCUMENTS.
9. INSTALL NEW CAT-5e CABLE.
10. ALL WALL, CEILING AND FLOOR PENETRATIONS SHALL BE CORE-DRILLED AS DIRECTED AND APPROVED BY CALTRANS SUFFICIENTLY LARGE TO ACCOMMODATE CONDUIT PLUS FLUSH MOUNTED END BELL. ALL CORE-DRILLS SHALL BE MADE WATER-TIGHT, SEALED AROUND CONDUIT PER CALTRANS REQUIREMENTS WITH FAST-SETTING EPOXY RESIN THROUGHOUT THE DEPTH OF HOLE.
11. INSTALL NEW INDICATOR LIGHT CANOPY CABLE.
12. INSTALL NEW INDICATOR LIGHT BOOTH CABLE.
13. INSTALL NEW INDICATOR LIGHT CONSOLE CABLE.
14. INSTALL NEW CMS COMM CABLE.
15. EXISTING TYPE 3 JUNCTION BOX BELOW CANOPY.
16. FINAL LOCATION OF CMS WORKSTATION.
17. INSTALL NEW TYPE 4 (1½" C) CONDUIT.
18. INSTALL NEW FIBER OPTIC DUPLEX JUMPER CABLES.
19. (E) FDU TO REMAIN.
20. REMOVE AND DISPOSE OF EXISTING INDICATOR LIGHT CABLE.
21. INSTALL NEW CMS PANEL AS SPECIFIED IN CONTRACT DOCUMENTS.
22. INSTALL TYPE 2 (1 ½" C) CONDUIT WITH 4 #12 & 1 #12G (120V, CMS SIGN)
23. ROUTE NEW CABLES THROUGH EXISTING CONDUIT.
24. MODIFY EXISTING GREEN INDICATOR LIGHT AND REPLACE WITH GREEN/FLASHING AMBER LED INDICATOR BULB. REPLACE EXISTING RED INDICATOR LIGHT WITH RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.
25. INSTALL NEW TYPE 2 (1½" C) CONDUIT.
26. INSTALL NEW TYPE 2 (1 ½" C) CONDUIT WITH 6 #12 & 3 #12G (120V, CMS SIGN)
27. ROUTE NEW CMS COMM CABLE THROUGH EXISTING JUNCTION BOX.
28. INSTALL NEW CMS PLAZA CABINET FOR LANES 1-3 AS SPECIFIED IN CONTRACT DOCUMENTS.
29. INSTALL INDICATOR LIGHT SWITCH CONSOLE PANEL.
30. REMOVE EXISTING INDICATOR LIGHT SWITCH IN TOLL BOOTH.
31. INSTALL NEW CMS CONTROLLERS. ROUTE CAT-5E PATCH CABLES FROM EACH CMS CONTROLLER TO NEW ETHERNET SWITCH IN EXISTING CMS CABINET.
32. INSTALL NEW TYPE 1 (2" C) CONDUIT.
33. INSTALL NEW TYPE 2 (2" C) CONDUIT.
34. INSTALL TYPE 1 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS.
35. INSTALL NEW TYPE 1 (1½" C) CONDUIT.
36. INSTALL NEW 6"X6"X4" JUNCTION BOX
37. DISCONNECT AT (E) PANEL-Q BRANCH CIRCUITS #13, 15, AND 17, AND LABEL BREAKERS AS SPARES.
38. INSTALL NEW TYPE 4 (2" C) CONDUIT
39. INSTALL AND TERMINATE INDICATOR LIGHT CABLES TO NEW TERMINAL BLOCKS AND WIRE TO SWITCH PANEL AS SHOWN IN PLANS AND APPROVED BY THE ENGINEER.
40. INSTALL LB FITTING.
41. INSTALL NEW PUSH BUTTON LED INDICATOR BOX.
42. PROVIDE NEW REVISED (TYPED WRITTEN) PANEL SCHEDULE.
43. INSTALL NEW TYPE 4 (1" C) CONDUIT.
44. INSTALL NEW TYPE 1 (1 ½" C) CONDUIT WITH 6 12 & 3 12G (120V, CMS SIGN) TO (E) PANEL-TB.
45. CORE DRILL (E) CONCRETE SLAB.
46. INSTALL TYPE 2 (1 ½" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS SIGN)
47. REPLACE EXISTING RED INDICATOR LIGHT WITH NEW RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.

PROJECT NOTES (DUMBARTON BRIDGE)

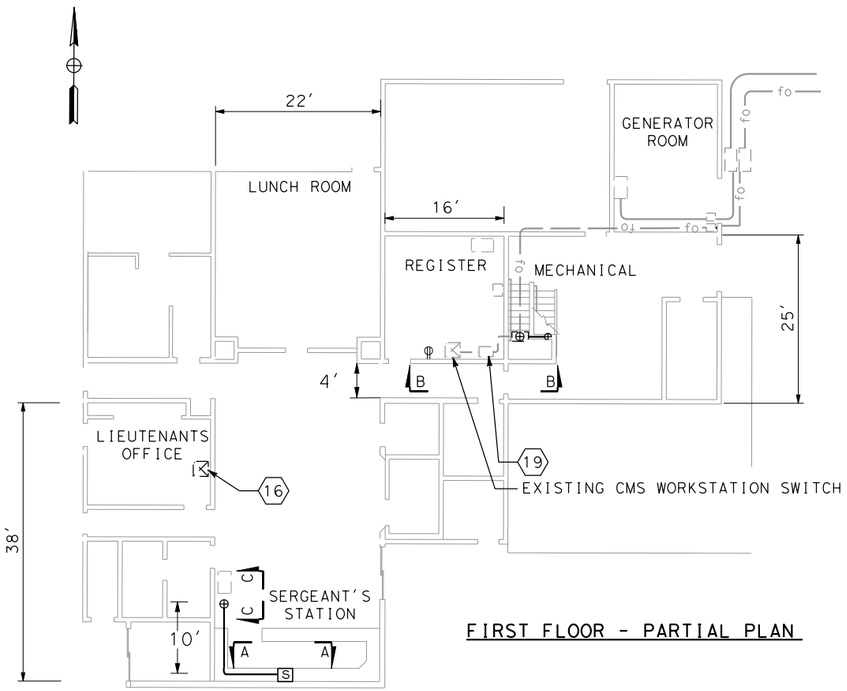
E-2

SHEET	OF
2	15

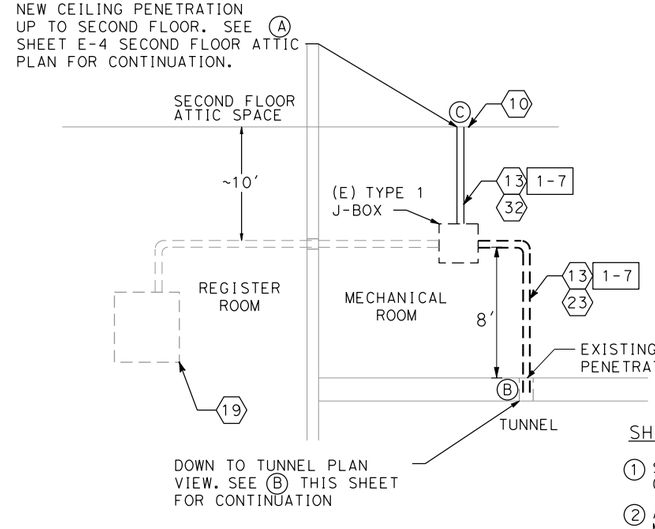
DATE PLOTTED => $DATE
TIME PLOTTED => $TIME
LAST REVISION 00-00-00

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
$REQUEST

BORDER LAST REVISED 2/1/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => $USER | DGN FILE => $REQUEST | CU 00000 | EA TBD (BATA-0006)



FIRST FLOOR - PARTIAL PLAN

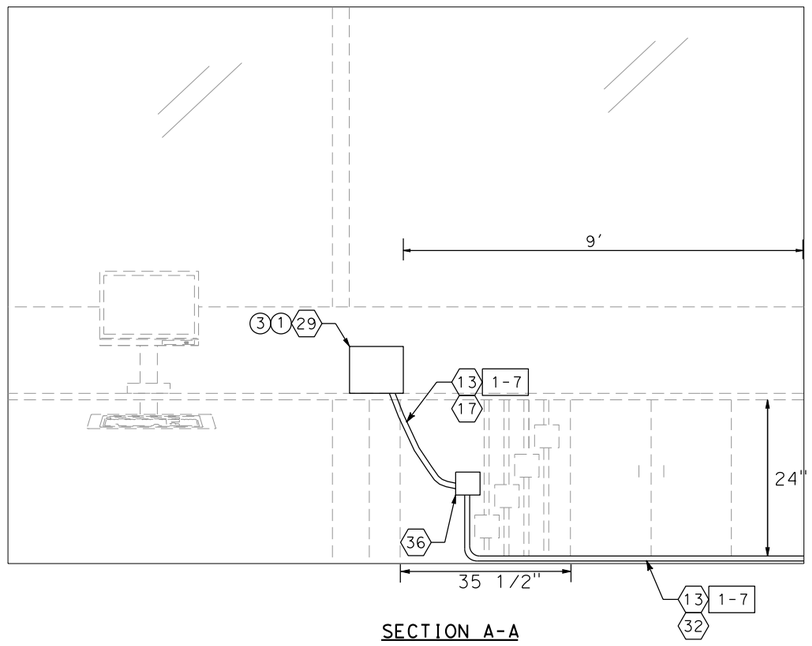


CONDUIT ELEVATION - SECTION B-B

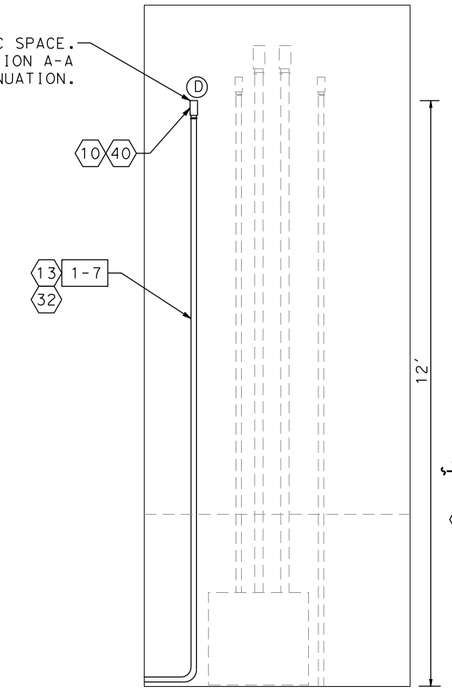
(MECHANICAL ROOM TO TUNNEL)

SHEET NOTES:

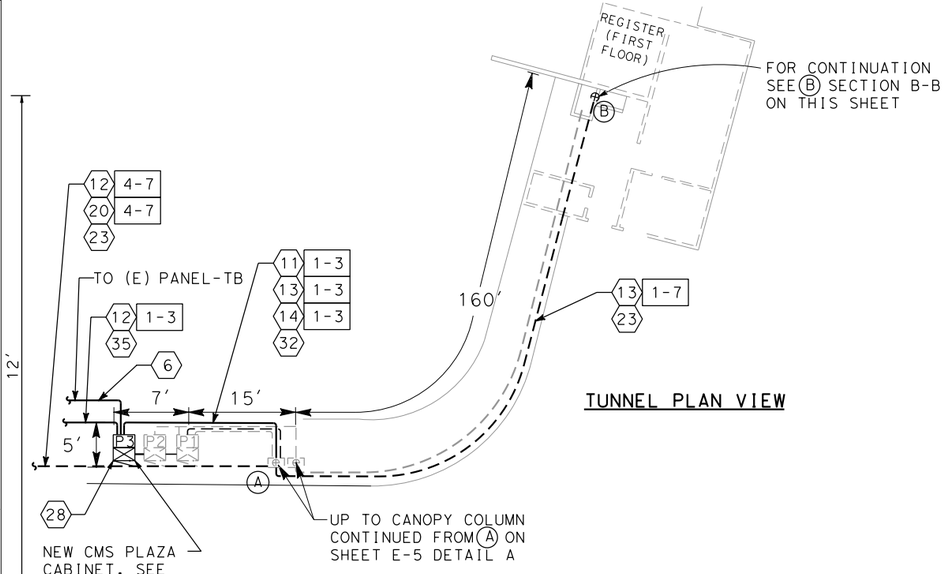
1. SEE SHEET E-10 FOR INDICATOR LIGHT SWITCH CONSOLE DETAIL.
2. ALL FLOOR AND WALL PENETRATIONS SHALL BE MADE WATERTIGHT. ALL PENETRATIONS SHALL BE CORE-DRILLED AS DIRECTED BY THE ENGINEER AND SHALL BE LARGE ENOUGH TO ACCOMODATE CONDUIT PLUS FLUSH MOUNTED END BELL.
3. ANY EXISTING FURNITURE REQUIRED TO BE RE-ARRANGED FOR PLACEMENT OF EQUIPMENT RACK AND INDICATOR LIGHT SWITCH CONSOLE SHALL BE COORDINATED WITH LIEUTENANT.



SECTION A-A



SECTION C-C



TUNNEL PLAN VIEW

TOLL PLAZA OPERATIONS BUILDING PARTIAL FIRST AND TUNNEL PLAN CONDUIT ROUTING (DUMBARTON BRIDGE)

NO SCALE

E-3

SHEET	OF
3	15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	58	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	59	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

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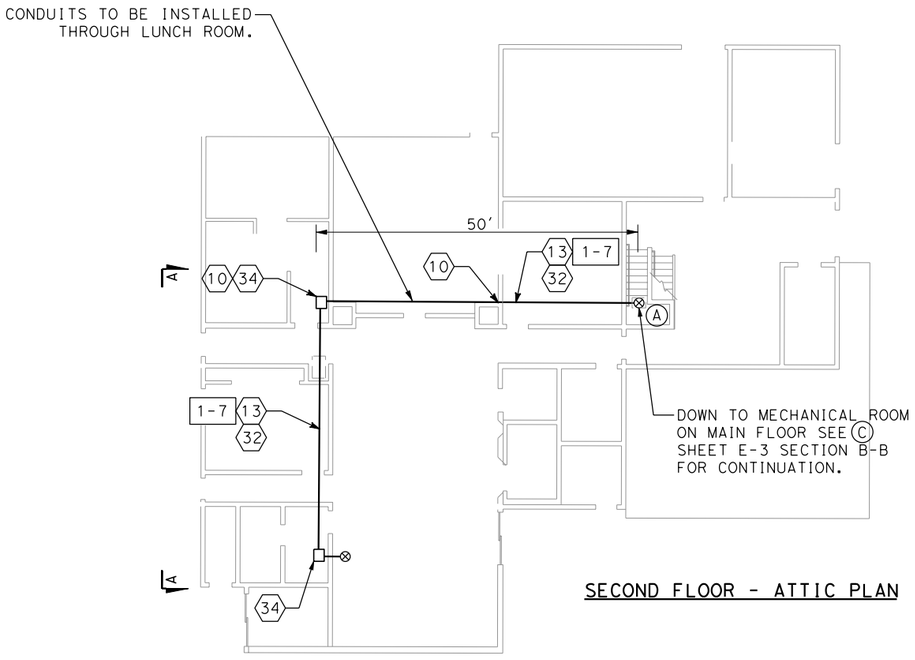
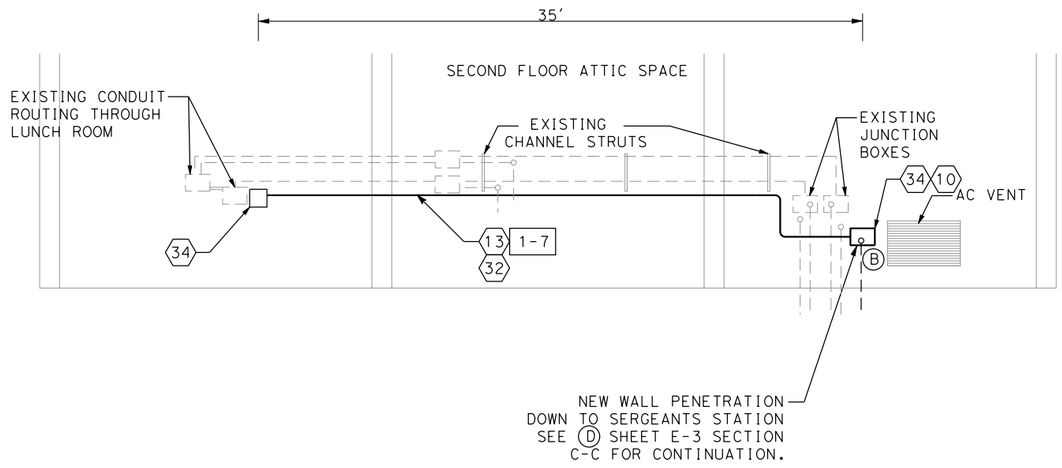
SHEET NOTES:

1. CONTRACTOR TO USE EXISTING CONDUIT SUPPORT SYSTEM AS MUCH AS POSSIBLE. PROVIDE NEW SUPPORT SYSTEM AS NECESSARY.
2. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.



SECOND FLOOR - ATTIC PLAN



SECTION A-A

TOLL PLAZA OPERATIONS BUILDING
SECOND FLOOR ATTIC PLAN
CONDUIT ROUTING
(DUMBARTON BRIDGE)

NO SCALE

E-4

SHEET	OF
4	15

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04	Ala	84	R3.21	60	123

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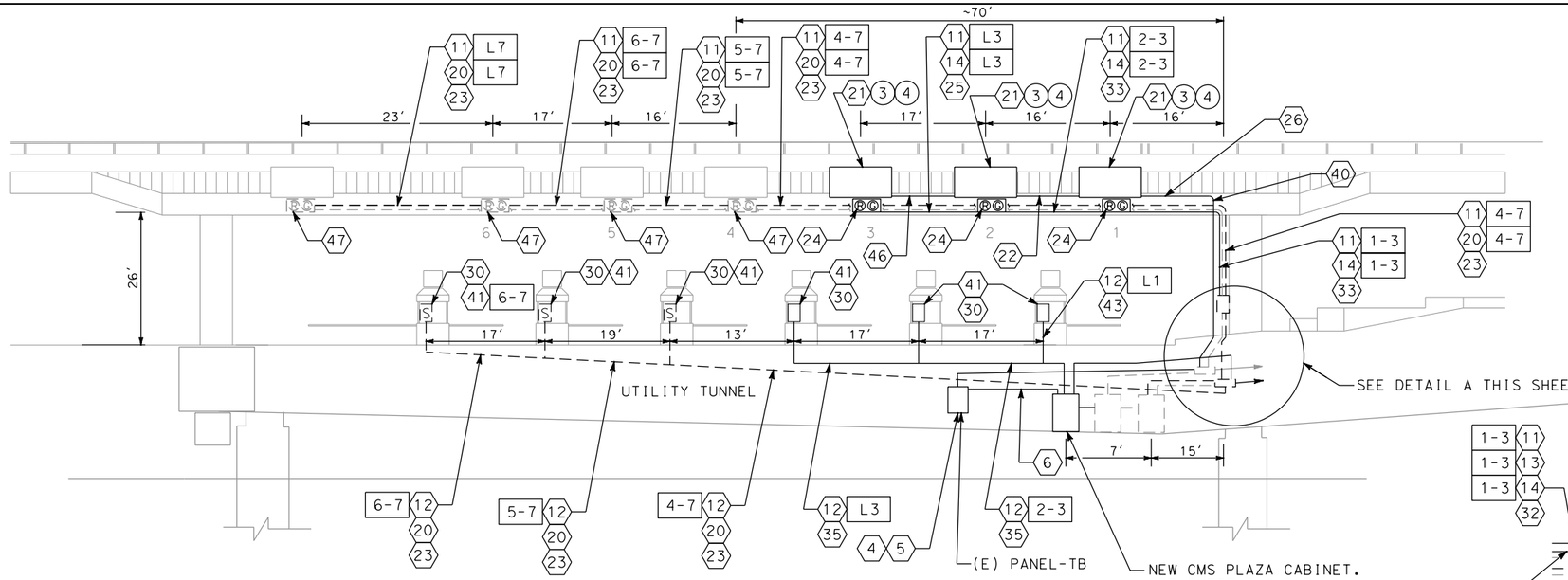
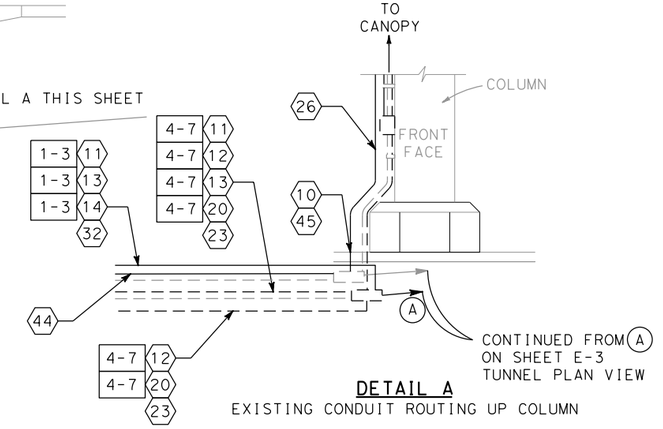
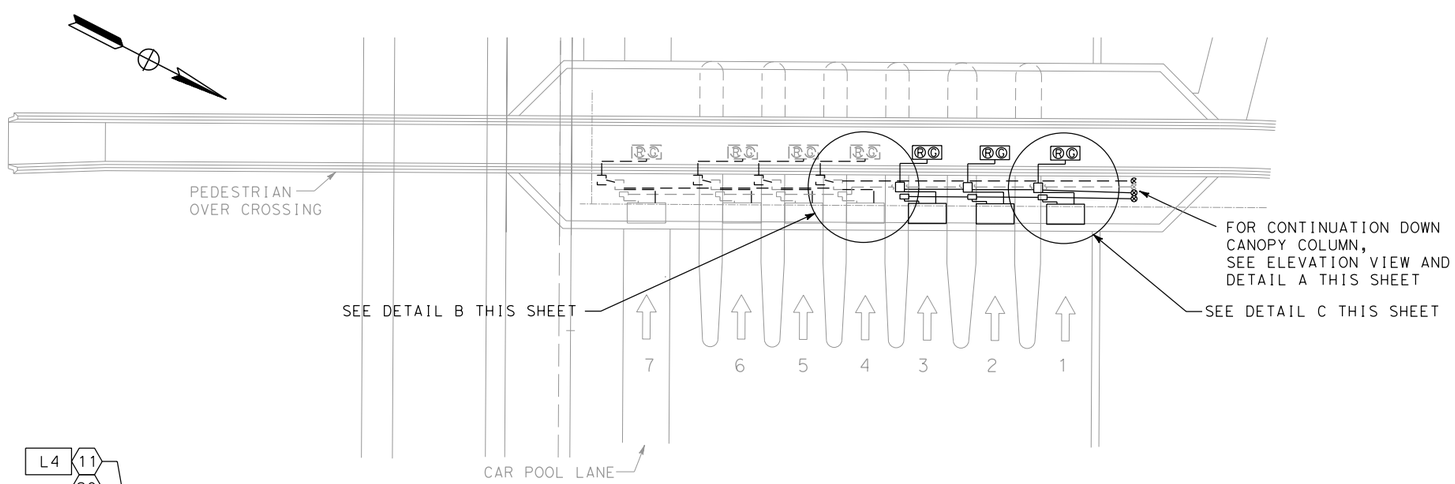


TOLL PLAZA CANOPY ELEVATION VIEW

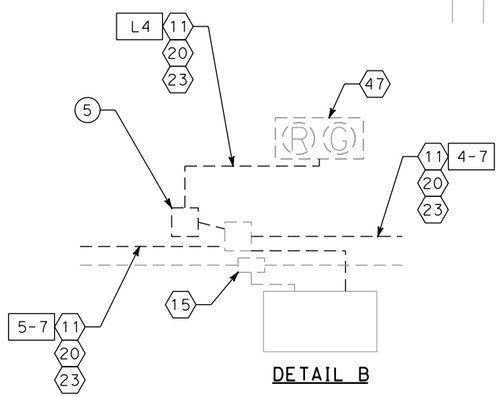


DETAIL A

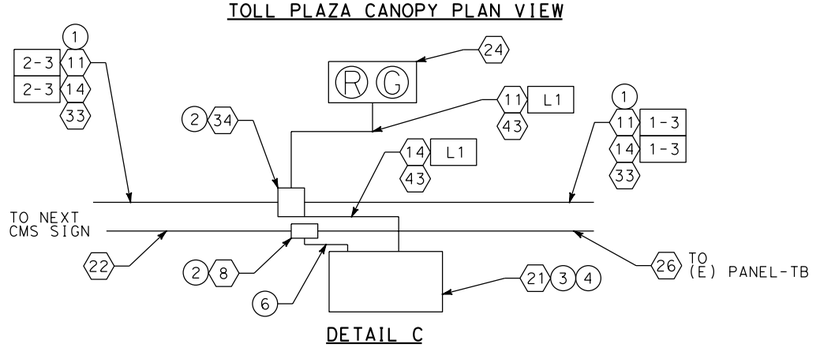
EXISTING CONDUIT ROUTING UP COLUMN



TOLL PLAZA CANOPY PLAN VIEW



TYPICAL CONDUIT INSTALLATION DETAIL FOR LANES 4-7.



TYPICAL CONDUIT INSTALLATION DETAIL FOR LANES 1-3.

NOTES:

1. CONTRACTOR TO PROVIDE CONDUIT SUPPORT.
2. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.
3. REMOVE AND SALVAGE EXISTING STATIC SIGNS IN LANES 1-3 AND INSTALL NEW CMS PANELS.
4. SEE SHEETS S-1, S-2 AND S-3 FOR CMS PANEL MOUNTING TO CANOPY DETAILS.
5. CONTRACTOR TO REMOVE EXISTING RELAY AND CABLING TO INDICATOR LIGHT AND ROUTE NEW INDICATOR LIGHT CANOPY CABLE TO EXISTING CMS PLAZA CABINETS. SEE SHEET E-12 FOR INDICATOR LIGHT WIRING DIAGRAM FOR LANES 4-7.
6. INSTALL NEW TYPE 4 (1" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS POWER).

TOLL PLAZA OPERATIONS BUILDING TUNNEL TO CANOPY CONDUIT ROUTING

(DUMBARTON BRIDGE)

NO SCALE

E-5

SHEET	OF
5	15

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ITEM	COMPONENT
①	INSTALL NEW CMS CONTROLLER.
②	REMOVE AND SALVAGE EXISTING ETHERNET SWITCH AT CABINET BOTTOM AND FURNISH AND INSTALL NEW RACK MOUNTABLE WITH 14-10/100BASE-T AND 2-100BASE-FX(SM) PORTS. FIBER PORT TO MATCH EXISTING. INSTALL NEW SWITCH RACK MOUNTED-NO SHELVES.
③	EXISTING PLAZA F.O. PATCH PANEL.
④	REMOVE/REPLACE EXISTING POWER STRIP WITH NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP.
⑤	EXISTING UPS TO BE REMOVED
⑥	NEW ELECTRICAL PANEL

ITEM	COMPONENT
⑦	EXISTING DATA TVSS TO BE REMOVED.
⑧	NEW 15 AMP GFI OUTLET
⑨	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
⑩	REMOVE EXISTING 1/4 AMP BREAKERS.
⑪	EXISTING ELECTRICAL PANEL
⑫	EXISTING 15 AMP OUTLET TO BE REMOVED
⑬	REMOVE/REPLACE EXISTING CMS CONTROLLERS WITH NEW CMS CONTROLLERS.
⑭	MOVE EXISTING EQUIPMENT TO ACCOMODATE NEW CABINET LAYOUT.
⑮	NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP

ITEM	COMPONENT
⑯	ONE (1) NEW 2 AMP BREAKER (120 VAC)
⑰	ONE (1) NEW NEC CLASS 3, 100 WATT 1:1, 120 VAC TRANSFORMER
⑱	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
⑲	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
⑳	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS. SEE SHEET E-15 FOR CABINET DRAWER LAYOUT.
㉑	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120 VAC) FOR POWER INDICATION

NOTES:

1. EQUIPMENT TO MEET CALTRANS TEES REQUIREMENTS.
2. REMOVED EQUIPMENT AND MATERIALS SHALL BE RETURNED TO BATA.
3. ALL EQUIPMENT SHALL BE SECURED. NO EQUIPMENT WILL BE LAYING IN BOTTOM OF CABINET. INSTALLATION SHALL BE NEAT, DRESSED AND ACCORDING TO THE PLANS.
4. CONTRACTOR SHALL SUBMIT MATERIAL SUBMITTALS FOR ALL CABINET COMPONENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
5. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS.
6. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS.
7. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.
8. EXISTING CMS CONTROLLER TO BE REPLACED WITH NEW CONTROLLER. NEW CMS CONTROLLER TO BE PROVIDED BY BATA.

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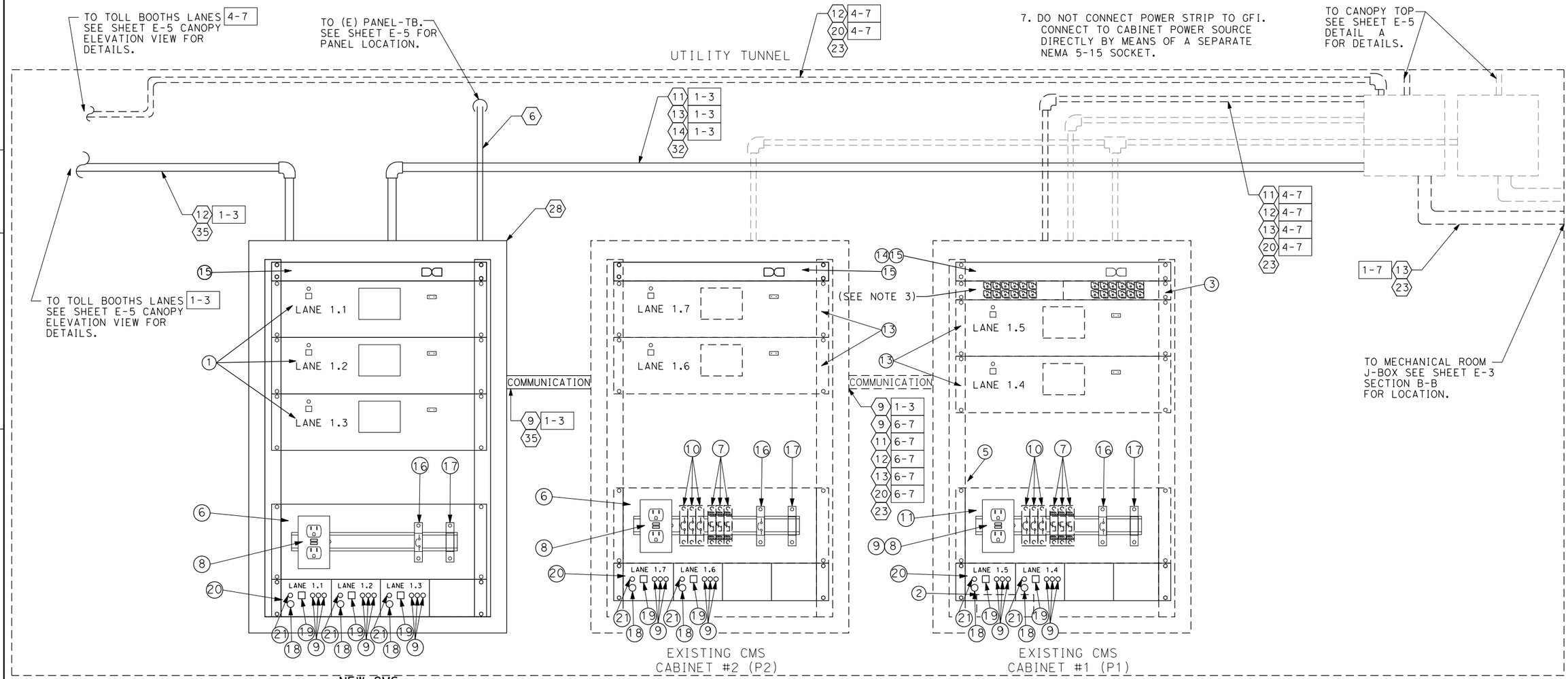

NEW CMS CABINET #3 (P3)

EXISTING CMS CABINET #2 (P2)

EXISTING CMS CABINET #1 (P1)

LANES 1-7 CMS CABINET ELEVATION VIEW

(SEE SHEETS E-3 AND E-5 FOR CMS CABINET LOCATIONS)

LANES 1-7 CMS CABINETS ELEVATION VIEW (DUMBARTON BRIDGE)

NO SCALE

E-6

SHEET	OF
6	15

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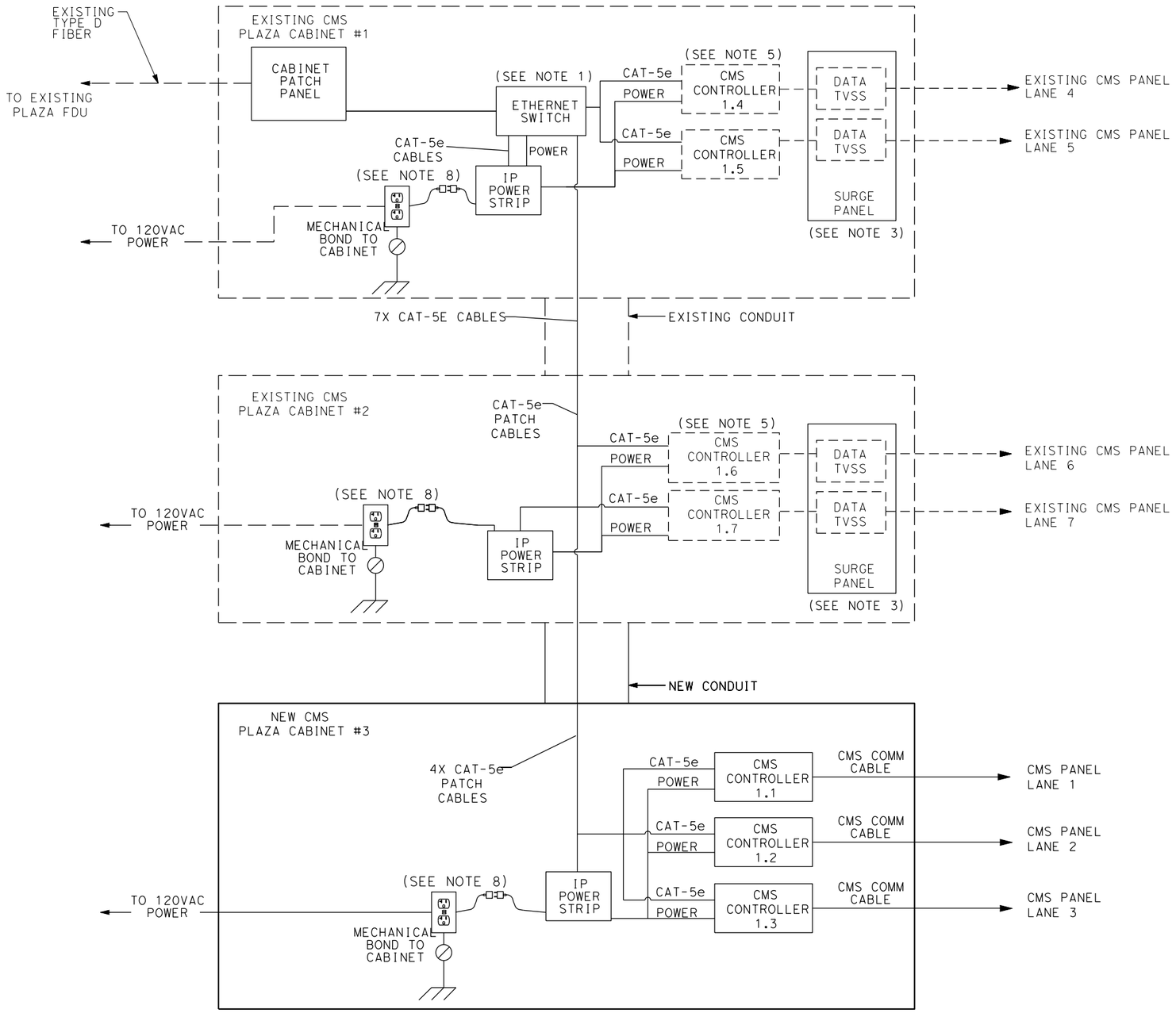

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER — DATE 3/12/10

RAMSEY J. HISSEN
No. C-39608
Exp. 12/31/10
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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NOTES:

1. REPLACE EXISTING GARRETCOM ETHERNET SWITCH IN CMS PLAZA CABINET #1 WITH NEW RACK MOUNTABLE SWITCH WITH MINIMUM 14 10/100 MBPS PORTS AND 2 FIBER 100 MBPS PORTS. OLD SWITCH SHALL BE RETURNED TO BATA.
2. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
3. CONTRACTOR TO REMOVE AND SALVAGE EXISTING TVSS. OLD TVSS SHALL BE RETURNED TO BATA.
4. SEE SHEETS E-3 AND E-5 FOR CMS CABINET LOCATIONS.
5. EXISTING CMS CONTROLLERS LOCATED IN EXISTING PLAZA CABINETS 1 AND 2 (LANES 1-4) SHALL BE REPLACED WITH NEW CMS CONTROLLERS TO BE PROVIDED WITH INTERNAL SURGE PROTECTION PER MANUFACTURER'S SPECS.
6. CONTRACTOR SHALL COORDINATE CLOSELY WITH BATA ON RE-CONFIGURATION OF CMS ETHERNET SWITCHES AND NETWORK OPERATIONS.
7. CONTRACTOR TO FIELD VERIFY THAT ALL TX/RX PORTS ARE MATCHED FOR PROPER OPERATIONS THROUGHOUT CMS NETWORK.
8. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.

CMS PLAZA CABINET WIRING SCHEMATIC FOR LANES 1-7 (DUMBARTON BRIDGE)

NO SCALE

E-7

SHEET	OF
7	15

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	63	123

Carol Light
REGISTERED CIVIL ENGINEER

3/12/10
DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
CAROL LIGHT
No. 10145
Exp. 09/30/11
ELECTRICAL
STATE OF CALIFORNIA

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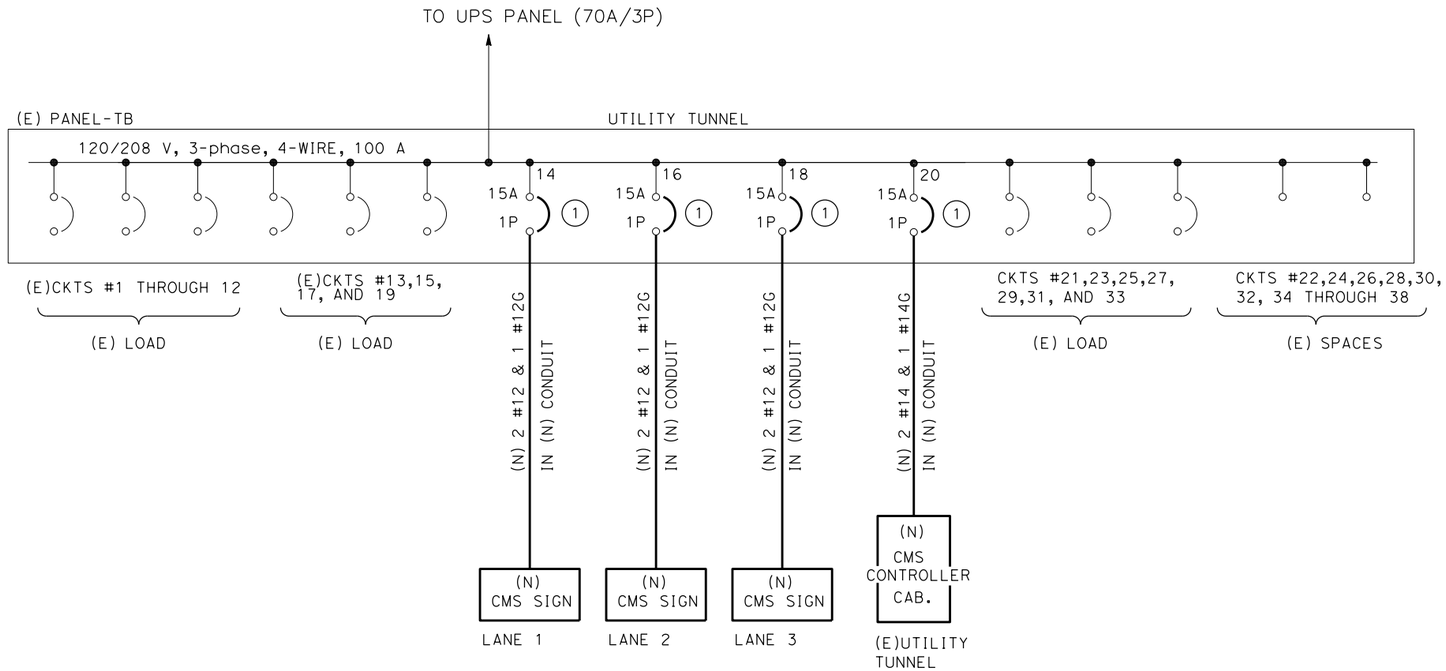
SHEET NOTES:

1. INSTALL NEW CIRCUIT BREAKER IN EXISTING SPACE.
2. THE CMS CABINET AND SIGNS SHALL BE CONNECTED TO THE BUILDING GROUNDING SYSTEM BY THE EQUIPMENT GROUND CONDUCTOR IN EACH CONDUIT.
3. ALL METAL PARTS OF THE ELECTRICAL SYSTEM SHALL BE BONDED TOGETHER PER CONTRACT SPECIFICATIONS.



PARTIAL ONE LINE DIAGRAM (DUMBARTON BRIDGE)

NO SCALE

E-8

SHEET	OF
8	15

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Carol Light 3/12/10
REGISTERED CIVIL ENGINEER DATE

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REGISTERED PROFESSIONAL ENGINEER
CAROL LIGHT
No. 10145
Exp. 09/30/11
ELECTRICAL
STATE OF CALIFORNIA

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NOTES:

1. CONTRACTOR TO UPDATE BREAKER PANEL BOARD SCHEDULE AND PROVIDE A NEW TYPED WRITTEN PANEL BOARD SCHEDULE.

PROJECT: BATA TO12 TOLL PLAZA CMS INSTALLATION

(E) PANEL- TB

LOCATION: DUMBARTON TUNNEL

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(E) LN #1- BOOTH MACHINE				15	1	1	A	2	15	1				(E) LN #6- BOOTH MACHINE
(E) LN #1- ENTRANCE LT. CURTAIN				15	1	3	B	4	15	1				(E) LN #6- ENTRANCE LIGHT CURTAIN
(E) LN #1- EXIT LT CURTAIN				15	1	5	C	6	15	1				(E) LN #6- EXIT LIGHT CURTAIN
(E) LN #2- BOOTH MACHINE				15	1	7	A	8	15	1				(E) UNKNOWN LOAD
(E) LN #2- ENTRANCE LT. CURTAIN				15	1	9	B	10	15	1				(E) UNKNOWN LOAD
(E) LN #2- EXIT LT. CURTAIN				15	1	11	C	12	15	1				(E) UNKNOWN LOAD
(E) LN #3- BOOTH MACHINE				15	1	13	A	14	15	1			0.50	(N) CMS SIGN- LN 1
(E) LN #3- ENTRANCE LT CURTAIN				15	1	15	B	16	15	1			0.50	(N) CMS SIGN- LN 2
(E) LN #3- EXIT LT. CURTAIN				15	1	17	C	18	15	1			0.50	(N) CMS SIGN- LN 3
(E) LN #4- BOOTH MACHINE				15	1	19	A	20	15	1			0.60	(N) CMS CABINET #3 (P3)
(E) LN #4- ENTRANCE LT. CURTAIN				15	1	21	B	22						(E) SPACE
(E) LN #4- EXIT LT. CURTAIN				15	1	23	C	24						(E) SPACE
(E) LN #5- BOOTH MACHINE				15	1	25	A	26						(E) SPACE
(E) LN #5- ENTRANCE LT. CURTAIN				15	1	27	B	28						(E) SPACE
(E) LN #5- EXIT LT. CURTAIN				15	1	29	C	30						(E) SPACE
(E) CAMERAS- VTDM				15	1	31	A	32						(E) SPACE
(E) LIGHT SENSOR- LN #4				15	1	33	B	34						(E) SPACE
(E) SPACE				15		35	C	36						(E) SPACE
TOTALS SECTION 1	0.00	0.00	0.00								0.00	0.00	2.10	

VOLTAGE: 120/208V	LOAD SUMMARY			BALANCE:	(KVA)	%	AMPS:	ADDITIONAL FEATURES:
PHASE/WIRE: 3 PHASE / 4 WIRE	CONNECT LOAD	DEMAND FACTOR	DEMAND LOAD	PHASE A:	1.10	52.38	3.06	
RATING: 225A	0.00	125% OF LOAD	0.00	PHASE B:	0.50	23.81	1.39	
MAINS: MAIN LUG ONLY	0.00	NEC 220-13	0.00	PHASE C:	0.50	23.81	1.39	
MOUNTING:	2.10	1.00	2.10					
A.I.C.:	2.10 KVA		2.10 KVA					
BUS SIZE: 225A	5.8 AMPS		5.8 AMPS					S&L JOB #:

TB PANELBOARD SCHEDULE (DUMBARTON BRIDGE)

NO SCALE

E-9

SHEET	OF
9	15

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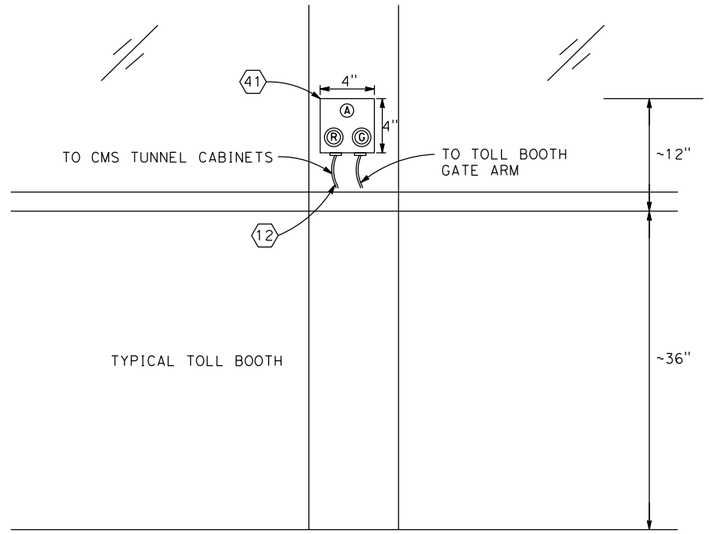
NOTES:

1. SIZE OF CONSOLE SWITCH PANEL WILL BE FIELD DETERMINED BY CONTRACTOR TO ACCOMMODATE NUMBER OF LANES.
2. SEE SHEET E-3 FOR LOCATION OF SWITCH CONSOLE PANEL.
3. SEE SHEETS E-11 AND E-12 FOR PROPOSED WIRING CONFIGURATION.
4. CONTRACTOR TO LABEL PUSH BUTTON SWITCH WITH R, G, AND A LETTERS FOR RED, GREEN, AND AMBER LANE INDICATION.



NEW TOLL BOOTH INDICATOR LIGHT SWITCH BOX

LEGEND

- (R) PANEL MOUNT MOMENTARY RED LED ILLUMINATED PUSH BUTTON SWITCH
- (G) PANEL MOUNT MOMENTARY GREEN LED ILLUMINATED PUSH BUTTON SWITCH
- (A) PANEL MOUNT MOMENTARY AMBER LED ILLUMINATED PUSH BUTTON SWITCH
- (A) AMBER INDICATOR LED LIGHT

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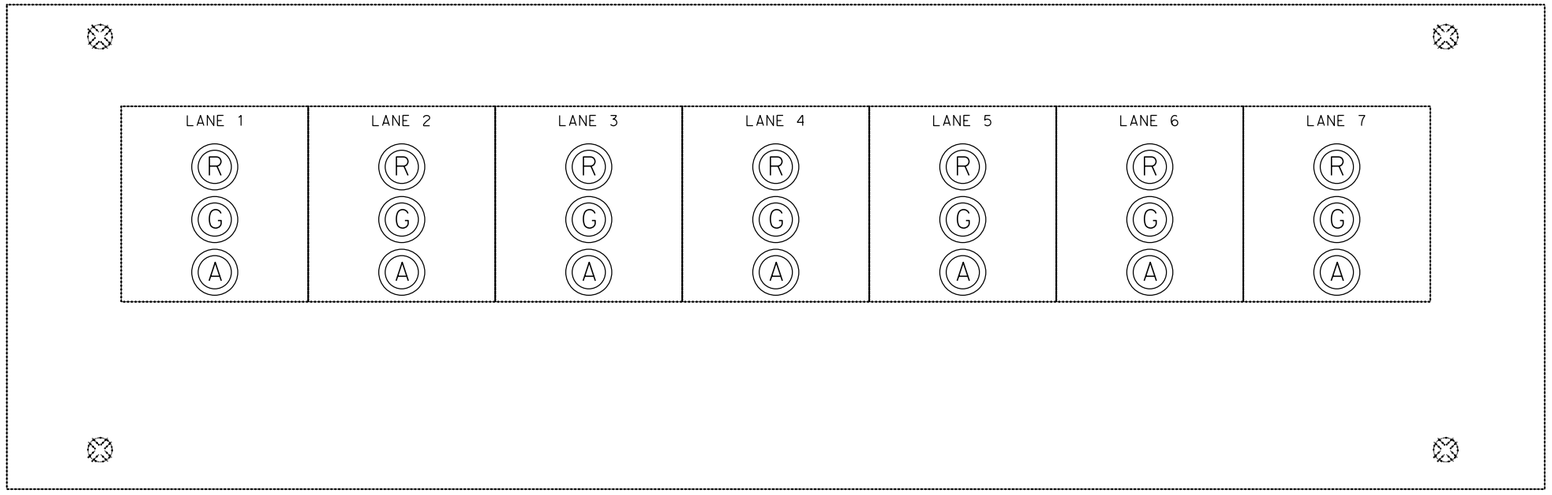

NEW INDICATOR LIGHT SWITCH CONSOLE PANEL

INDICATOR LIGHT SWITCH CONSOLE PANEL AND TOLL BOOTH INDICATOR SWITCH BOX (DUMBARTON BRIDGE)

NO SCALE

E-10

SHEET	OF
10	15

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	66	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

RAMSEY J. HISSEN, No. C-39608, Exp. 12/31/10 CIVIL, REGISTERED PROFESSIONAL ENGINEER, STATE OF CALIFORNIA

PLANS APPROVAL DATE

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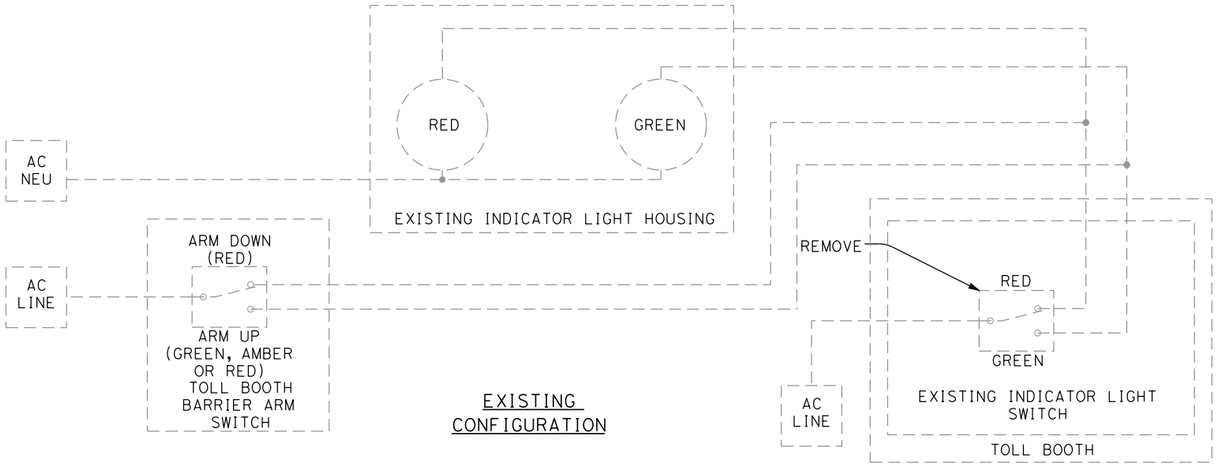
OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- ⊡ CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 ½ AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 7)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)



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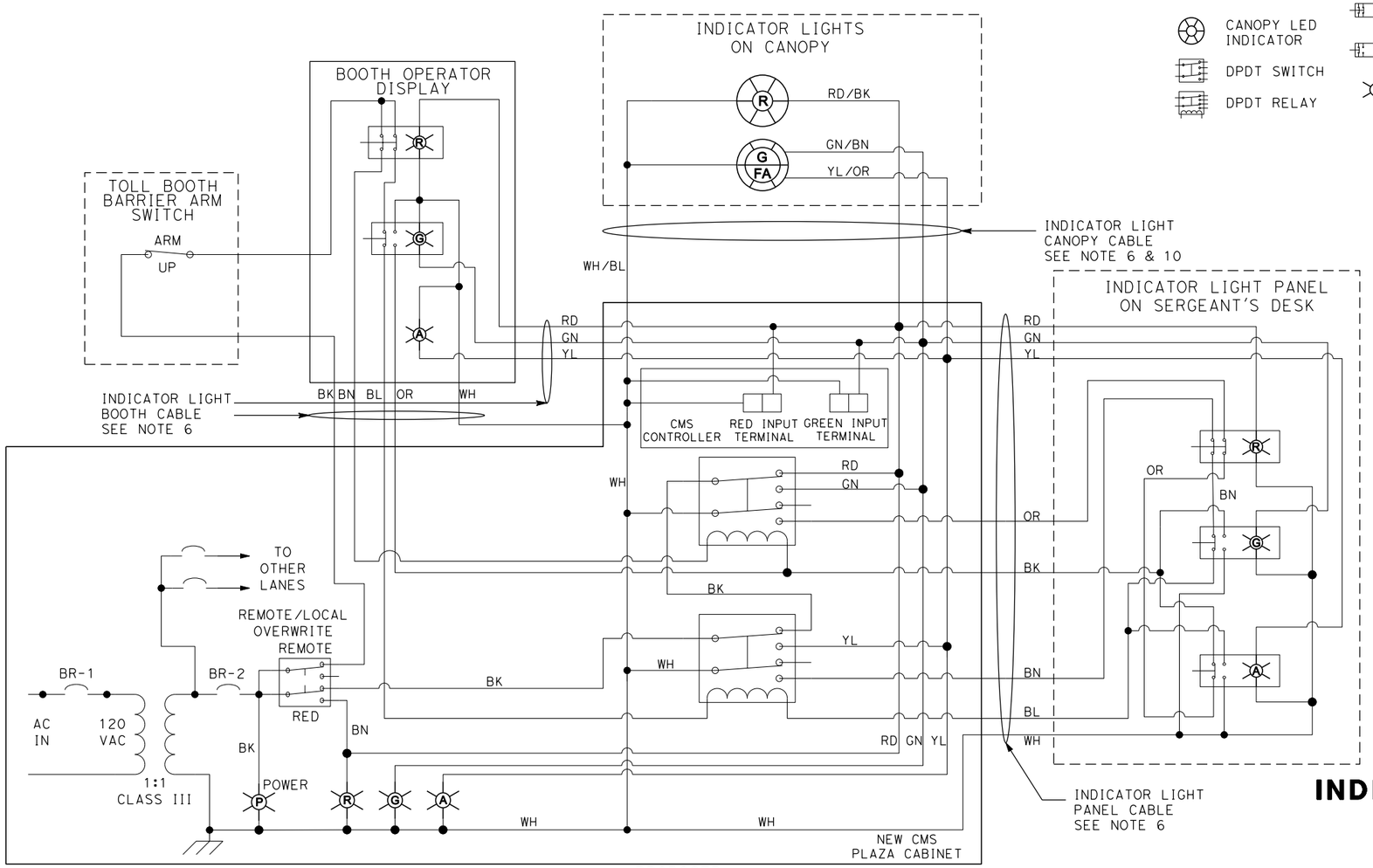

PROPOSED CONFIGURATION

NOTES:

1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-10 FOR INDICATOR LIGHT SWITCH CONSOLE PANEL DETAIL.
3. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP. ONE TRANSFORMER PER CMS CABINET.
4. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
5. BELDEN 5506UE OR APPROVED EQUIVALENT.
6. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
7. ONE (1) 1/2 AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) 1/2 AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
8. INTERCEPT EXISTING GATE ARM CABLE IN TOLL Bbooth.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 CMS CONTROLLERS.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHTS ON CANOPY.

INDICATOR LIGHT WIRING DIAGRAM FOR LANES 1-3 (DUMBARTON BRIDGE)

NO SCALE

E-11

SHEET	OF
11	15

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	67	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

RAMSEY J. HISSEN No. C-39608 Exp. 12/31/10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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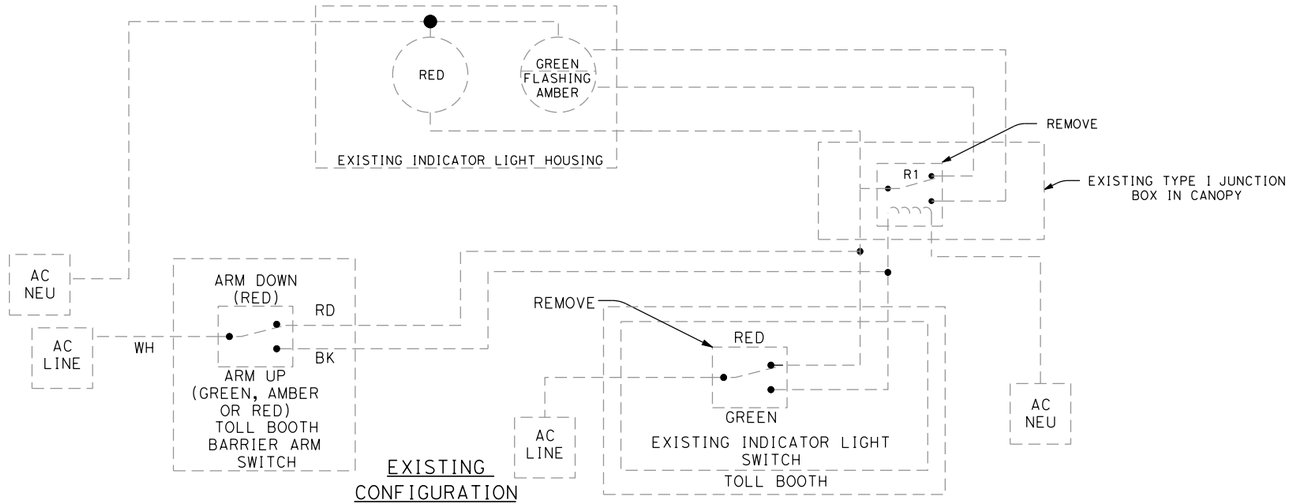
OAKLAND, CA 94607

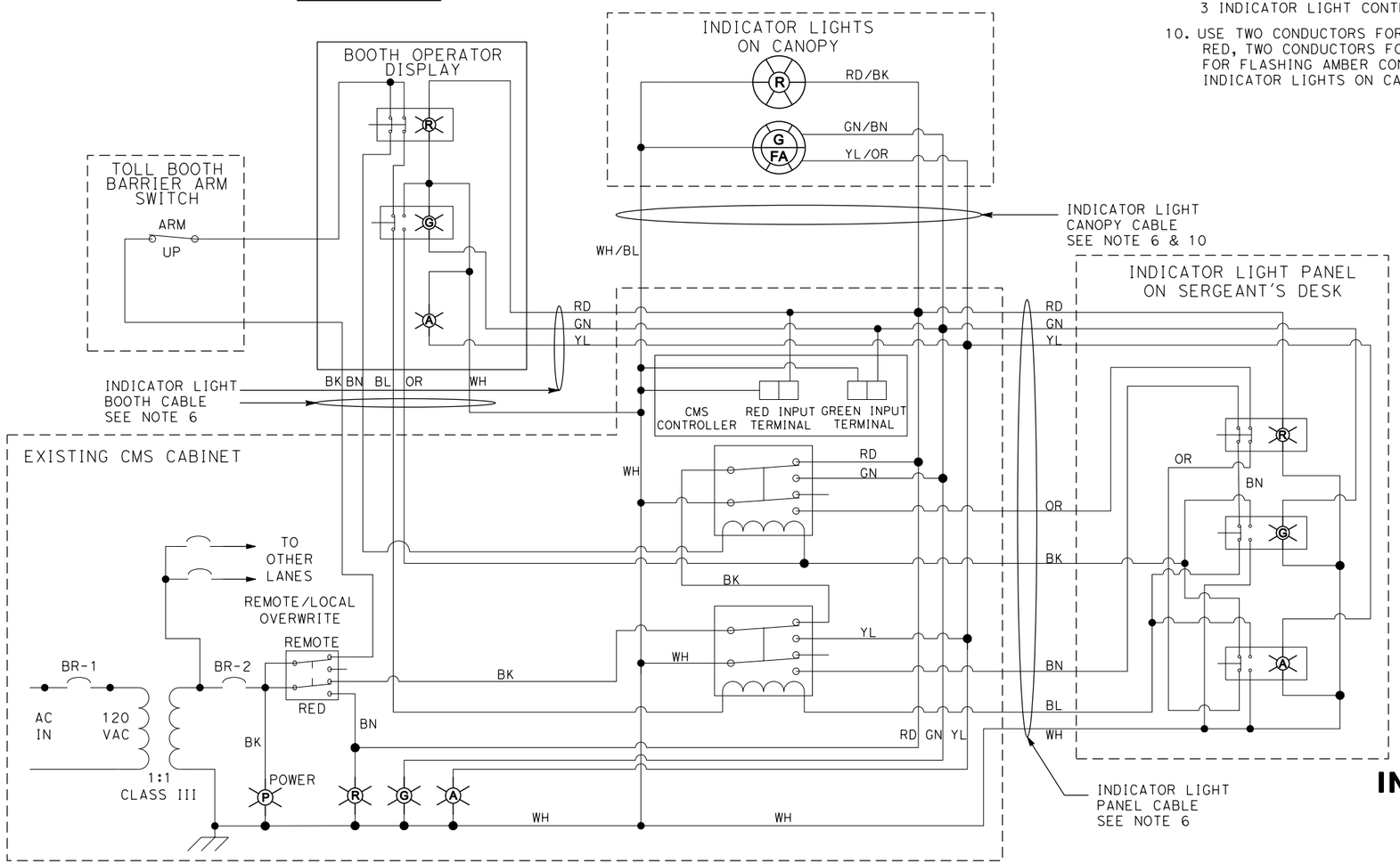
URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

NOTES:

1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-10 FOR INDICATOR LIGHT SWITCH CONSOLE PANEL DETAIL.
3. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP. ONE TRANSFORMER PER CMS CABINET.
4. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
5. BELDEN 5506UE OR APPROVED EQUIVALENT.
6. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
7. ONE (1) 2 AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) 2 AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
8. INTERCEPT EXISTING GATE ARM CABLE IN TOLL BOOTH.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 INDICATOR LIGHT CONTROL LANES.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHTS ON CANOPY.



EXISTING CONFIGURATION



PROPOSED CONFIGURATION

LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 ½ AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 7)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)

INDICATOR LIGHT WIRING DIAGRAM FOR LANES 4-7 (DUMBARTON BRIDGE)

NO SCALE

E-12

SHEET	OF
12	15

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EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	68	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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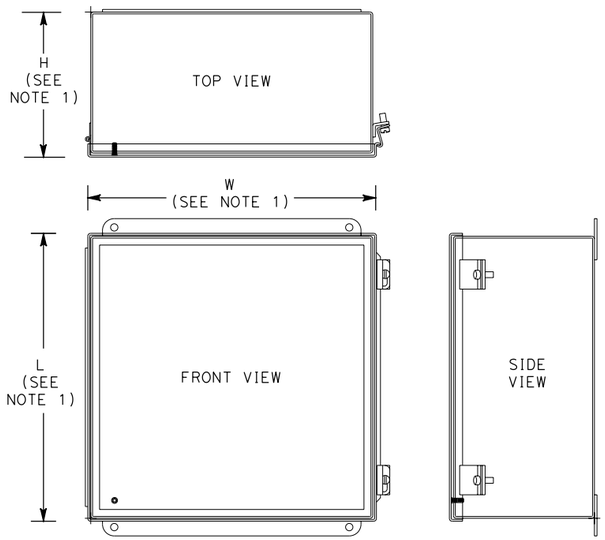
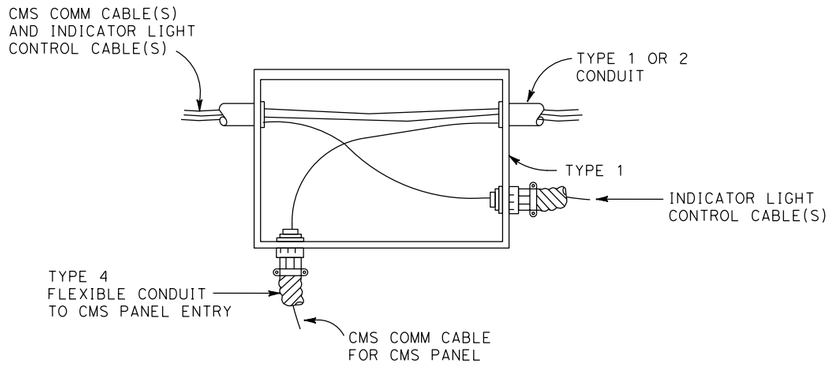
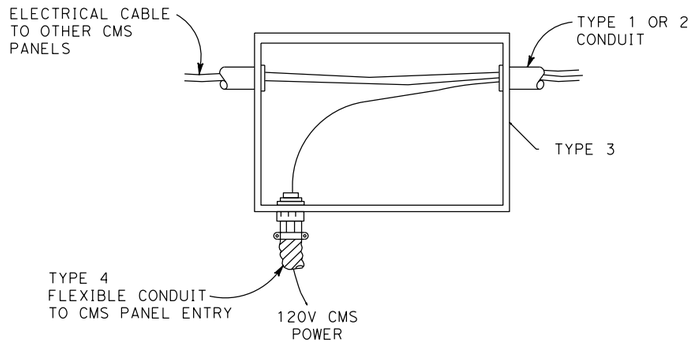


NEMA 4X JUNCTION BOX
(SHOWN WITH HINGE)





NOTES:

1. TYPE 1 NEMA 4X JUNCTION BOX (12"L X 12"W X 6"D, TYP.) OR AS REQ'D.
   TYPE 3 NEMA 4X JUNCTION BOX (5"L X 6"W X 4"D, TYP.) OR AS REQ'D.
2. MINIMUM SIZES OF JUNCTION BOXES SHOWN. CONTRACTOR SHALL CONFIRM SIZES AND QUANTITIES IN FIELD AND SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.
3. FOR JUNCTION BOX MOUNTED ON EXISTING CONCRETE WALLS OR SURFACE FLOOR MOUNTED USE ⅜" EXPANSION ANCHORS, TOTAL OF 4 FOR EACH BOX.
4. COIL A MINIMUM OF 3' OF CABLE FOR EACH DEVICE IN THE TYPE 1 AND TYPE 3 JUNCTION BOXES.

JUNCTION BOX DETAILS (DUMBARTON BRIDGE)

NO SCALE

E-13

SHEET	OF
13	15

LAST REVISION 00-00-00
DATE PLOTTED => #DATE
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04	Ala	84	R3.21	69	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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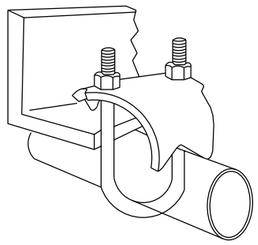
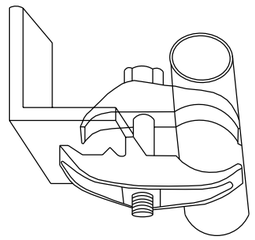
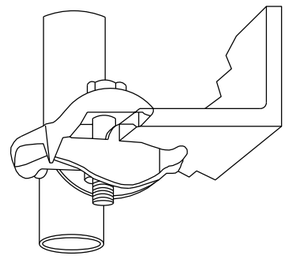
SUITE 1500
SAN JOSE, CA 95113



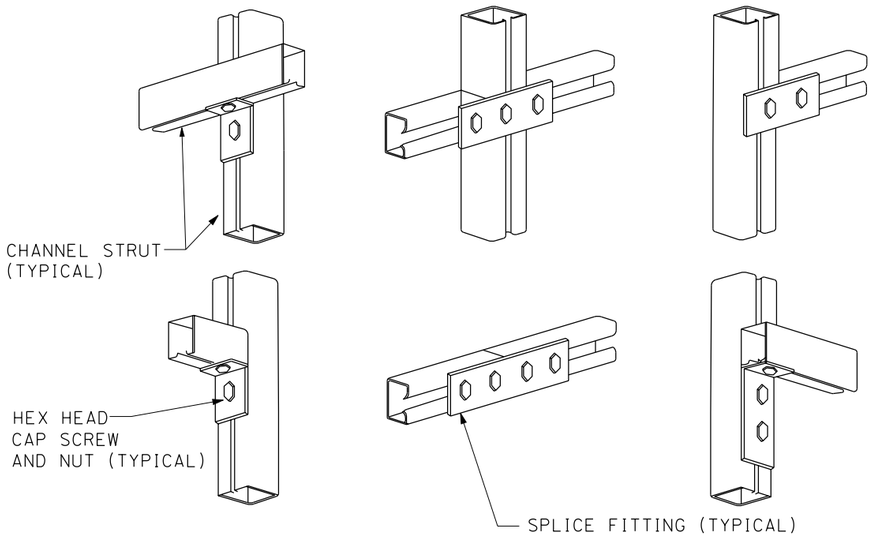
FOR MOUNTING PIPES OR CONDUIT AT RIGHT ANGLES TO THE BEAM DETAIL



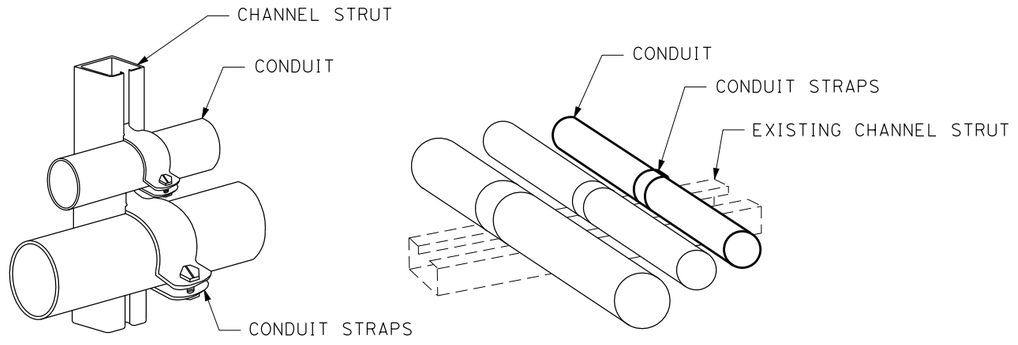
FOR MOUNTING PIPES OR CONDUIT PARALLEL TO THE BEAM DETAIL



FOR MOUNTING PIPES OR CONDUIT VERTICALLY ACROSS BEAM EDGE DETAIL



TYPICAL EQUIPMENT SUPPORT CHANNEL, FITTINGS AND FASTENERS



MOUNTING ON STRUT DETAILS

CONDUIT MOUNTING AND ATTACHMENT DETAILS (DUMBARTON BRIDGE)

NO SCALE

E-14

SHEET	OF
14	15

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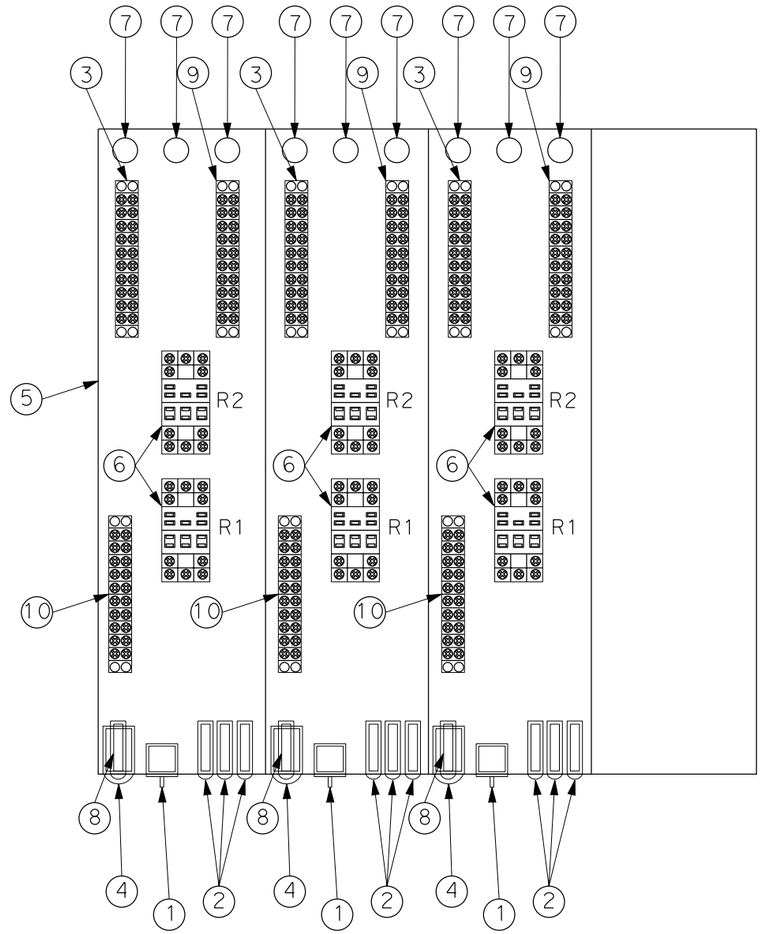
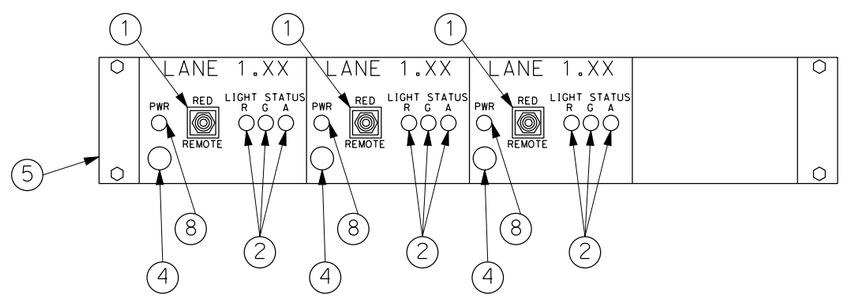
EA TBD (BATA-0006)

ITEM	COMPONENT
(1)	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
(2)	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
(3)	TERMINAL BLOCKS FOR INDICATOR LIGHT CANOPY CABLE AND POWER
(4)	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
(5)	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS.
(6)	TWO (2) NEW DPDT RELAYS
(7)	DRILLED HOLES AT BOTTOM OF DRAWER FOR INDICATOR LIGHT CABLE
(8)	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION
(9)	TERMINAL BLOCKS FOR INDICATOR LIGHT BOOTH CABLE
(10)	TERMINAL BLOCKS FOR INDICATOR LIGHT PANEL CABLE

TOP VIEW



FRONT VIEW



NOTES:

1. ALL EQUIPMENT SHALL BE SECURED. NO EQUIPMENT WILL BE LAYING IN BOTTOM OF CABINET. INSTALLATION SHALL BE NEAT, DRESSED AND ACCORDING TO THE PLANS.
2. CONTRACTOR SHALL SUBMIT MATERIAL SUBMITTALS FOR ALL CABINET COMPONENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
3. INDICATOR LIGHT CABLES TO BE WIRED ACCORDING TO THE INDICATOR LIGHT WIRING DIAGRAMS AS SHOWN ON SHEETS E-11 TO E-12.
4. INDICATOR LIGHT DRAWER LAYOUT SHOWN FOR TYPICAL CMS CABINET.
5. ROUTE ALL CABLES THROUGH DRILLED HOLES AT BOTTOM OF DRAWER. INCLUDE PLASTIC GROMMETS IN HOLE.
6. TERMINATE ALL CABLES ON NEW TERMINATION BLOCKS.
7. FASTEN ALL CABLES TO DRAWER TO PREVENT STRAINING ON TERMINATION BLOCKS.
8. EACH CABINET DRAWER SHALL BE DESIGNED TO ACCOMMODATE UP TO FOUR (4) INDICATOR CONTROL LANES.
9. CONTRACTOR TO LEAVE AT LEAST ONE RACK UNIT OF SPACE BETWEEN DRAWER AND BOTTOM OF CABINET.

INDICATOR LIGHT CABINET DRAWER LAYOUT (DUMBARTON BRIDGE)

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	R3.21	70	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

RAMSEY J. HISSEN, No. C-39608, Exp. 12/31/10, CIVIL, REGISTERED PROFESSIONAL ENGINEER, STATE OF CALIFORNIA

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SHEET	OF
15	15

E-15

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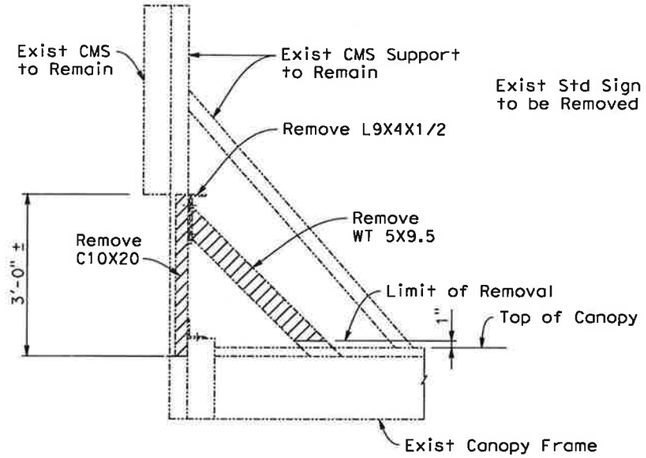
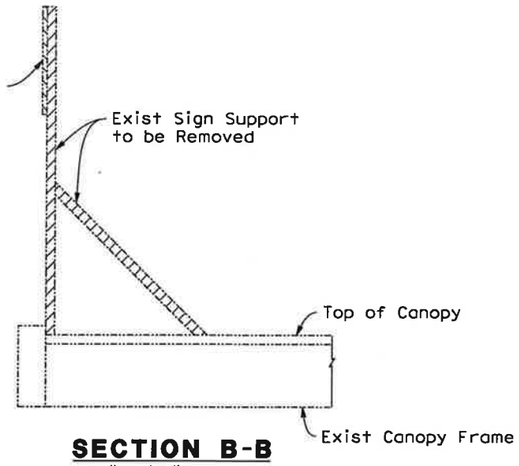


SECTION A-A
3/4"= 1'-0"



SECTION B-B
3/4"= 1'-0"

LEGEND

- Indicates Exist Structure
- Indicates New Structure
- Indicates Removal of Exist Brackets and Signs

Note:

Part of roof materials contain asbestos and due precaution and protective measures shall be taken by Contractor when removing portion of roof materials. Refer to special provisions for details.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	CC	580	6.13	71	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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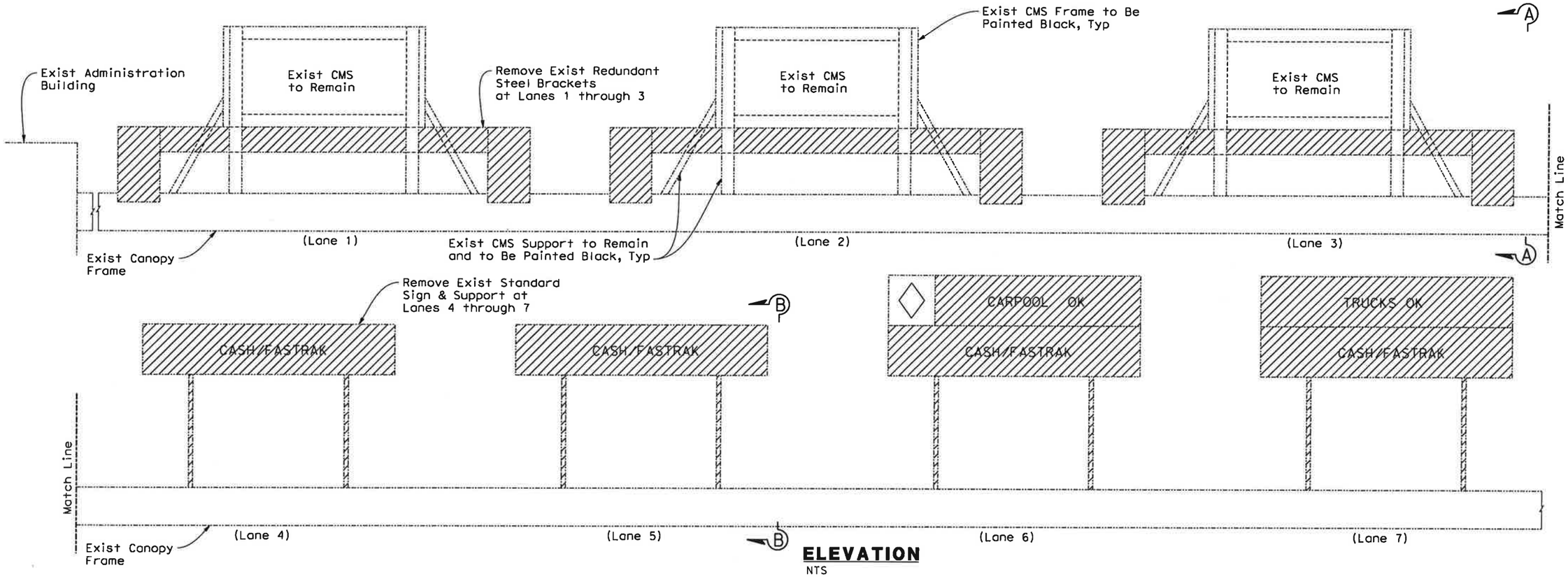
OAKLAND, CALIFORNIA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



ELEVATION
NTS

DESIGN OVERSIGHT		DESIGN	BY G. Xu	CHECKED	
SIGN OFF DATE		DETAILS	BY X. Sun	CHECKED	
DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)		QUANTITIES	BY G. Xu	CHECKED	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Guoping Xu
PROJECT ENGINEER

CU
EA

FILE => ...\Structural\S-01.dgn

BRIDGE NO.

POST MILE 6.13

RICHMOND-SAN RAFAEL BRIDGE PLAZA

DEMOLITION OF EXISTING SIGN AND BRACKETS

SHEET S-1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) 03/12/10

SHEET 1 OF 3

USERNAME => Florin_Lo DATE PLOTTED => 3/12/2010 TIME PLOTTED => 10:00:07 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	CC	580	6.13	72	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

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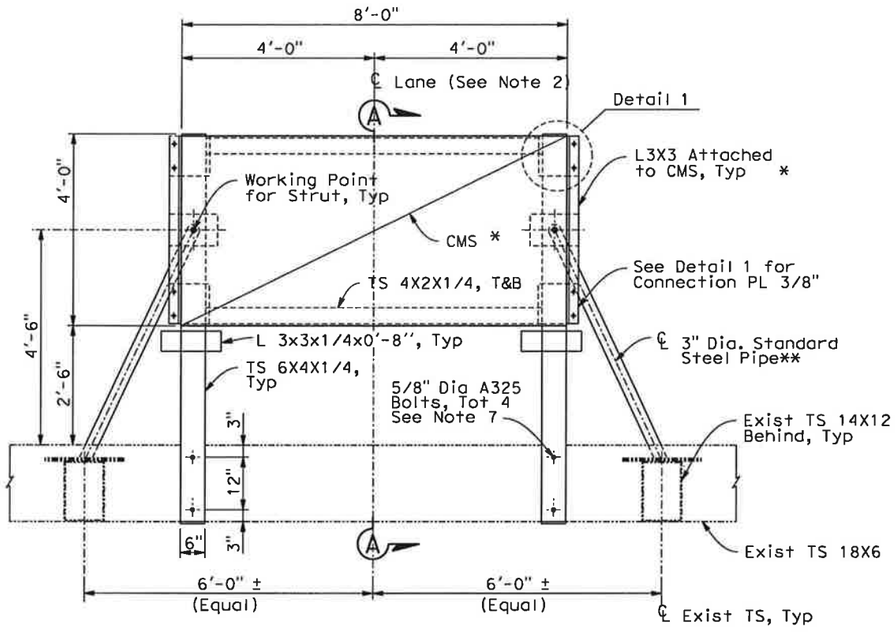
OAKLAND, CALIFORNIA 94607

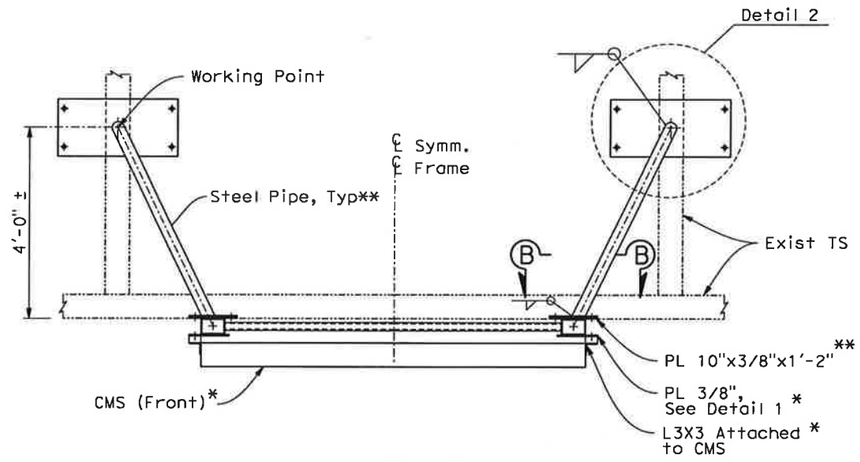
MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



TYPICAL CMS SUPPORT ELEVATION

SCALE: 3/4" = 1'-0"

* (By CMS Manufacturer)
** (Materials funished by the owner)



PLAN

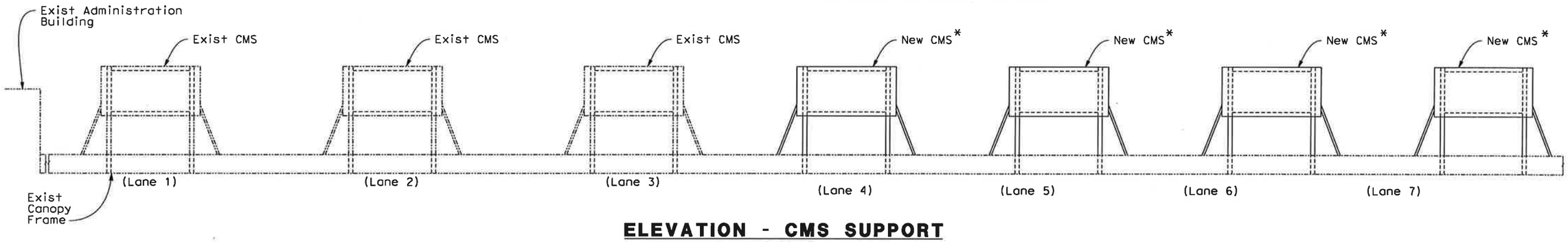
SCALE: 3/4" = 1'-0"

(Roofing not Shown for Clarity, See Note 3)
(Items noted (*) are by others)

* (By CMS Manufacturer)
** (Materials funished by the owner)

Notes:

1. The Contractor shall verify controlling feild dimension before ordering or fabricating any materials.
2. All support frame & hardware including CMS attachment angles shall be galvanized.
3. Partial removal of roofing will be necessary for access. Repair shall be carried out after installation of support frame.
4. All bolt connections shall be Dia 1/2" A325 unless noted otherwise.
5. For Details 1 & 2 and Sections A & B See "CMS support Details" Sheet.
6. Part of roof materials contain asbestos and due precaution and protective measures shall be taken by Contractor when removing portion of roof materials. Refer to special provisions for details.
7. The bolts through existing TS member shall be snug tight only and have locking system.
8. All bolts, washers and lock nuts shall be of stainless steel or galvanized.



ELEVATION - CMS SUPPORT

NO SCALE

(* By CMS Manufacturer)

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

LEGEND
---------- Indicates Exist Structure
———— Indicates New Structure

DESIGN OVERSIGHT		DESIGN	BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER	BRIDGE NO.	RICHMOND-SAN RAFAEL BRIDGE TOLL PLAZA
SIGN OFF DATE		DETAILS	BY X. Sun	CHECKED			POST MILE 6.13	CMS SUPPORT FRAME
DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)		QUANTITIES	BY G. Xu	CHECKED	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	CU EA	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES (PRELIMINARY STAGE ONLY) 03/12/10

SHEET S-2 — SHEET 2 OF 3

FILE => ...\Structural\S-02.dgn

USERNAME => Florin_Lo — DATE PLOTTED => 3/12/2010 — TIME PLOTTED => 10:00:39 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	CC	580	6.13	73	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

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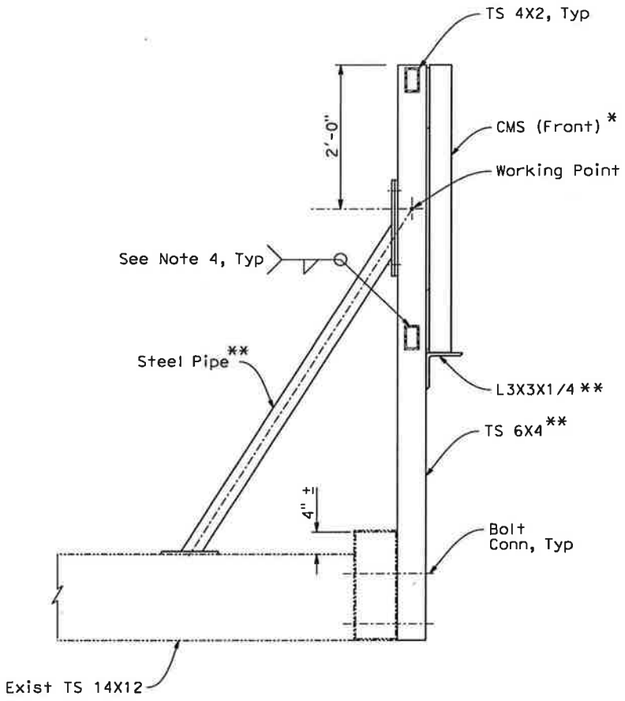
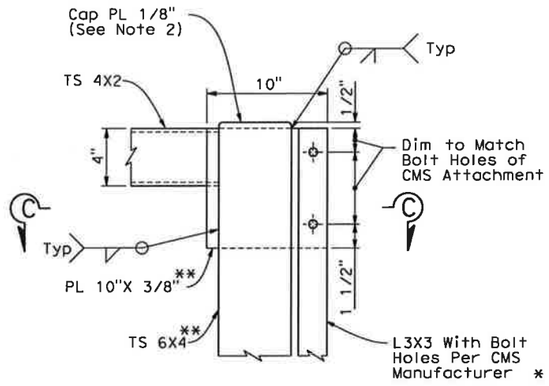
BAY AREA TOLL AUTHORITY
101 EIGHT STREET
OAKLAND, CALIFORNIA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



SECTION A-A
SCALE: 1" = 1'-0"



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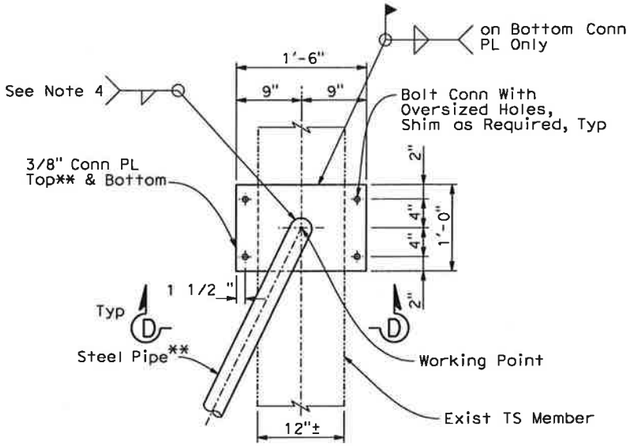

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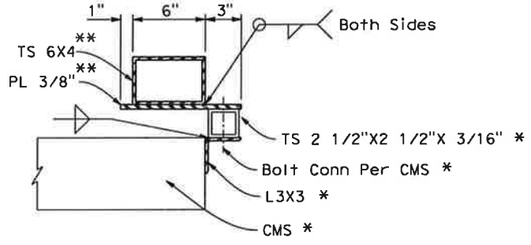
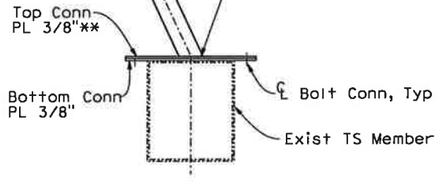
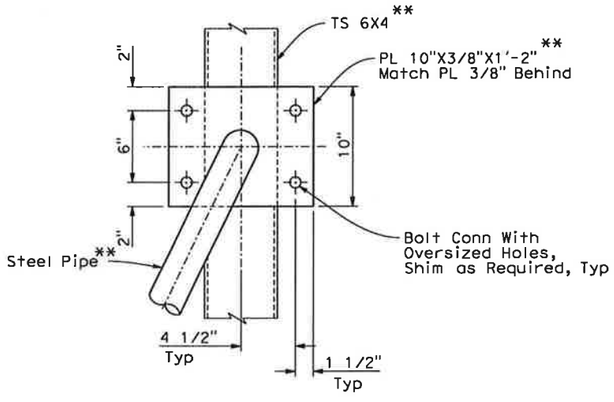


SECTION C-C
SCALE: 1/2" = 1'-0"



SECTION D-D
SCALE: 1" = 1'-0"



SECTION B-B
SCALE: 1/2" = 1'-0"

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

Notes:

1. The Contractor shall verify controlling feild dimension before ordering or fabricating any materials.
2. TS 6X4 shall have same cap plate at both top and bottom.
3. Items noted (*) are by CMS manufacturer. Materals noted (**) are to be furnished by the Owner.
4. The Contractor has the option of field welding the plates to the steel pipe.

DESIGN OVERSIGHT / SIGN OFF DATE		DESIGN	BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
		DETAILS	BY X. Sun	CHECKED	Guoping Xu, PROJECT ENGINEER
		QUANTITIES	BY G. Xu	CHECKED	CU EA

BRIDGE NO. — POST MILE 6.13

RICHMOND SAN RAFAEL BRIDGE TOLL PLAZA
CMS SUPPORT DETAILS

SHEET S-3

DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)										SHEET	OF
03/12/10										3	3

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USERNAME => Florin_Lo@MGE PLOTTED => 3/12/2010 TIME PLOTTED => 10:01:17 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	74	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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BAY AREA TOLL AUTHORITY
101 EIGHTH STREET
OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE LATEST VERSION OF THE CALTRANS STANDARD PLAN AND SPECIFICATIONS.
2. CALL UNDERGROUND SERVICE ALERT 48 HOURS BEFORE EXCAVATION U.S.A. (800) 277-2600.
3. ALL ELECTRICAL AND CMS EQUIPMENT, INFRASTRUCTURE, LANDSCAPING OR BUILDINGS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. ALL ELECTRICAL AND CMS EQUIPMENT INCLUDING CONDUITS, JUNCTION AND SPLICE EQUIPMENT RACK ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER.
5. SERVICE EQUIPMENT, AND CMS CABINET ENCLOSURES, CONTROLLER ASSEMBLIES, CMS AND OTHER ELECTRICAL EQUIPMENT ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATION SHALL BE DETERMINED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
6. ALL EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHOWN ON THE PLANS IS FOR REFERENCE AND SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. LOCATIONS ARE APPROXIMATED. ANY DAMAGE TO THE EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.
7. NEW CIRCUIT BREAKERS TO BE INSTALLED TO EXISTING PANEL BOXES SHALL MATCH THE EXISTING TYPE OR APPROVED BY THE ENGINEER AS REQUIRED.
8. ALL DIMENSIONS INDICATED ARE TO BE VERIFIED IN FIELD PRIOR TO COMMENCING WORK.
9. THE CONTRACTOR SHALL IDENTITY AND VERIFY ALL EXISTING UTILITIES, POWER SOURCES AND POWER CONSUMPTIONS AS REQUIRED OR NEEDED AS SHOWN ON THE PLANS PRIOR TO COMMENCING WORK.
10. SEE STRUCTURAL PLANS FOR EXACT LOCATION OF CMS STRUCTURES, FRAMES AND MOUNTING BRACKETS.
11. ALL ABOVE GROUND CONDUIT SHALL BE SUPPORTED AT A MINIMUM OF EVERY 5 FEET.
12. ALL ELECTRICAL ITEMS THAT USE ANCHORS TO ATTACH TO THE CONCRETE STRUCTURES SHALL USE STAINLESS STEEL POWER STUD ANCHORS-THREADED VERSION SIZED PER MANUFACTURER RECOMMENDATION AND EPOXY ANCHOR HOLES USING SEALANT WITH A RATED LIFE OF 25 YEARS OR GREATER.
13. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE CEC, NEC & NATIONAL ELECTRICAL SAFETY CODE. ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER NEC REQUIREMENTS. ALL COMPONENTS INCLUDING CONDUITS JUNCTION BOXES, CABLING, EQUIPMENT, AND CABINETS SHALL BE CLEARLY LABELED WITH PROPER TAGS, NAME PLATES, AND I.D. LABELS.
14. CONTRACTOR SHALL USE TYPE 1 CONDUIT IN TUNNEL AND TRENCH, TYPE 2 CONDUIT FOR EXPOSED CONDITIONS AND TYPE 4 FLEXIBLE CONDUIT AS SHOWN ON PLANS.
15. ALL EXTERIOR PULL BOXES AND JUNCTION BOXES SHALL BE NEMA 4X.
16. ALL ELECTRICAL AND EXTERIOR CONNECTIONS SHALL BE WEATHERPROOF.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ANY EXISTING CONDUIT AND/OR JUNCTION BOXES TO BE USED ON THIS CONTRACT PRIOR TO PULLING NEW CABLE THROUGH. ANY DAMAGE TO NEW OR EXISTING CABLE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.

LEGEND:

- CHANGEABLE MESSAGE SIGN
- EXISTING CONDUIT
- EXISTING CONDUIT WITH NEW CABLE
- NEW CONDUIT
- JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW CMS CABINET
- EXISTING PLAZA CABINET
- CONDUIT IN
- CONDUIT OUT
- EXISTING INDICATOR LIGHT SWITCH PANEL
- LANE X TO LANE Y CABLES
- TERMINAL BLOCK
- EXISTING FIBER OPTIC CABLE
- EXISTING TRAFFIC SIGNAL INDICATOR
- QUAD RECEPTICAL
- DUPLEX RECEPTICAL
- NEW EQUIPMENT RACK # = RACK TYPE
- NEW WORKSTATION
- NEW INDICATOR LIGHT SWITCH CONSOLE PANEL
- RISER CONDUITS
- DROP CONDUITS
- NEW LED INDICATOR BOX

ABBREVIATIONS:

AM	AMBER
BK	BLACK
BL	BLUE
BN	BROWN
C	CONDUIT
CAB	CABINET
CEC	CALIFORNIA ELECTRICAL CODE
CMS	CHANGEABLE MESSAGE SIGN
COMM	COMMUNICATIONS
CPB	COMMUNICATIONS PULL BOX
CKT	CIRCUIT
E	EXISTING
ETC	ELECTRONIC TOLL COLLECTION
FDU	FIBER DISTRIBUTION UNIT
FO	FIBER OPTIC
GFI	GROUND FAULT INTERRUPT
GN	GREEN
ILB	INDICATOR LIGHT BOOTH
ILC	INDICATOR LIGHT CANOPY
ILP	INDICATOR LIGHT PANEL
J-BOX	JUNCTION BOX
JB	JUNCTION BOX
KVA	KILO-VOLT AMPERE
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT EMITTING DIODE
MLO	MAIN LUG ONLY
NEC	NATIONAL ELECTRICAL CODE
N	NEUTRAL (GROUNDED CONDUCTOR)
ORT	OPEN ROAD TOLLING
PB	CEILING/WALL MOUNTED PULL BOX
PCC	PORTLAND CEMENT CONCRETE
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
RMC	RIGID METAL CONDUIT
R#	RELAY (# = RELAY NUMBER)
RD	RED
SS	STAINLESS STEEL
TEES	TRANSPORTATION ELECTRICAL EQUIPMENT
SM	SINGLE MODE
TB	TERMINAL BLOCKS
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYPE A CABLE	36 SINGLE MODE FIBER OPTIC CABLE
TYPE D CABLE	12 SINGLE MODE FIBER OPTIC CABLE
TYPE 1 CONDUIT	GALVANIZED RIGID STEEL (GRS)
TYPE 2 CONDUIT	TYPE 1 CONDUIT COATED WITH PVC OR POLYETHYLENE
TYPE 4 CONDUIT	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
UPS	UNINTERRUPTIBLE POWER SUPPLY
XFMR	TRANSFORMER
YL	YELLOW

INDEX:

STANDARD NOTES:

- BC INSTALL PULL BOX IN EXISTING CONDUIT RUN.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- SC SPLICE NEW TO EXISTING CONDUCTORS.
- AB ABANDONED
- RD REMOVE AND DISPOSE
- RS REMOVE AND SALVAGE

WIRING DIAGRAM LEGEND:

- CB CIRCUIT BREAKER
- NB NEUTRAL BUS
- GB GROUND BUS
- ENCLOSURE BOND
- GROUNDING ELECTRODE
- CIRCUIT BREAKER
- RECEPTACLE

GENERAL NOTES, LEGEND, ABBREVIATIONS AND INDEX OF DRAWINGS (RICHMOND - SAN RAFAEL)

E-1

SHEET	OF
1	17

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LAST REVISION 00-00-00 | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	75	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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BAY AREA TOLL AUTHORITY
101 EIGHTH STREET
OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

PROJECT NOTES:

1. INSTALL NEW CAT-5e CABLE IN EXISTING CONDUIT.
2. INSTALL NEW CAT-5e CABLE.
3. INSTALL NEW TYPE 1 (¾") CONDUIT WITH 2 #12 AND 1 #14G (120 V, CMS CABINET). ROUTE CONDUIT BELOW (E) CABLE TRAY AND PROVIDE CONDUIT SUPPORT.
4. INSTALL ONE 15A, 1P, 120V CIRCUIT BREAKER FOR NEW CMS CABINET IN (E)SPACE #40.
5. INSTALL NEW FOUR(4)15A-IP CIRCUIT BREAKERS (120 V, CMS SIGN) IN (E) SPACES 8,10,11 AND 12).
6. INSTALL TYPE 1 (1 1/2") CONDUIT WITH 8 #12 AND 4 #12G (120 V, CMS SIGNS).
7. INSTALL TYPE 4 (1 1/2") CONDUIT WITH 8 #12 AND 4 #12G (120 V, CMS SIGNS). ROUTE CONDUIT IN (E) CABLE TRAY AND (E) CEILING TO (E) EMERGENCY PANEL.
8. ROUTE CONDUIT WITH 8 #12 AND 4 #12G TO (E) CANOPY (CORE DRILL IS REQUIRED). SEAL AROUND CONDUIT PENETRATION WITH FAST-SETTING EPOXY RESIN THROUGH THE DEPTH OF HOLE.
9. INSTALL TYPE 1 (1 1/2") CONDUIT WITH 8 #12 AND 4 #12G (120 V, CMS SIGNS) AND ROUTE ABOVE CEILING TILE.
10. ALL WALL, CEILING AND FLOOR PENETRATIONS SHALL BE CORE-DRILLED AS DIRECTED AND APPROVED BY CALTRANS SUFFICIENTLY LARGE TO ACCOMMODATE CONDUIT PLUS FLUSH MOUNTED END BELL. ALL CORE-DRILLS SHALL BE MADE WATER-TIGHT, SEALED AROUND CONDUIT PER CALTRANS REQUIREMENTS WITH FAST-SETTING EPOXY RESIN THROUGHOUT THE DEPTH OF HOLE.
11. INSTALL NEW INDICATOR LIGHT CANOPY CABLE.
12. INSTALL NEW INDICATOR LIGHT BOOTH CABLE.
13. INSTALL NEW INDICATOR LIGHT CONSOLE CABLE.
14. INSTALL NEW CMS COMM CABLE.
15. (E) 1¼" C - 6 #12 & 4 #12G (120V, (E) CMS SIGNS)
16. INSTALL NEW EQUIPMENT RACK MOUNTABLE SHELF.
17. INSTALL NEW TYPE 4 (1½" C) CONDUIT.
18. CONTRACTOR TO RE-SEAL CONDUIT PENETRATION UP TO CANOPY.
19. (E) FDU TO REMAIN.
20. REMOVE AND DISPOSE OF EXISTING INDICATOR LIGHT CONTROL CABLE.
21. REMOVE AND DISPOSE OF EXISTING SPARE GREEEN, BLACK, & WHITE CABLES.
22. INSTALL NEW 8 #12 & 8 #12G (120V, CMS SIGNS).
23. ROUTE NEW CABLES THROUGH EXISTING CONDUIT.
24. MODIFY EXISTING GREEN INDICATOR LIGHT AND REPLACE WITH GREEN/FLASHING AMBER LED INDICATOR BULB. REPLACE EXISTING RED INDICATOR LIGHT WITH RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.
25. INSTALL NEW TYPE 2 (1 ½" C) CONDUIT.
26. REMOVE AND DISPOSE OF AS DIRECTED BY THE ENGINEER.
27. ROUTE NEW CMS COMM CABLE THROUGH EXISTING JUNCTION BOX.
28. INSTALL NEW TYPE 3 EQUIPMENT RACK FOR LANES 4-7. SEE SHEET E-9 AND SPECIFICATIONS FOR SIZE AND TYPE.
29. INSTALL INDICATOR LIGHT SWITCH CONSOLE PANEL.
30. REMOVE EXISTING INDICATOR LIGHT SWITCH PANEL IN TOLL BOOTH.
31. INSTALL NEW CMS CONTROLLERS. ROUTE CAT-5E PATCH CABLES FROM EACH CMS CONTROLLER TO NEW ETHERNET SWITCH IN EXISTING CMS CABINET.
32. INSTALL NEW TYPE 1 (2" C) CONDUIT.
33. INSTALL NEW TYPE 2 (2" C) CONDUIT.
34. INSTALL TYPE 1 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS.
35. INSTALL NEW TYPE 1 (1½" C) CONDUIT.
36. INSTALL NEW 4X4X4 JUNCTION BOX
37. INSTALL NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP TO BE CONNECTED TO ETHERNET SWITCH.
38. INSTALL NEW TYPE 4 (2" C) CONDUIT
39. INSTALL AND TERMINATE INDICATOR LIGHT CABLES TO NEW TERMINAL BLOCKS AND WIRE TO SWITCH PANEL AS SHOWN IN PLANS AND APPROVED BY THE ENGINEER.
40. INSTALL L TYPE FITTING.
41. INSTALL NEW TOLL BOOTH LED PUSH BUTTON INDICATOR BOX.
42. INSTALL TYPE 2 (1½" C) CONDUIT WITH 8 #12 & 4 #12G (120V, CMS POWER).
43. INSTALL NEW TYPE 4 (1" C) CONDUIT.
44. INSTALL TYPE 3 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS.
45. INSTALL NEW CMS PANEL AS SPECIFIED IN CONTRACT DOCUMENTS.
46. INSTALL NEW 15A-1P CIRCUIT BREAKER (120V, CMS CONTROLLER) IN SPACE #42 TO MATCH (E).
47. PROVIDE NEW REVISED (TYPED WRITTEN) PANEL SCHEDULE.
48. INTERCEPT (E) CONDUIT (120V, CMS CONTROLLER) AND EXTEND TO (E) PANEL-PB. PROVIDE NEW 2 #14 & 1 #14G BETWEEN CONTROLLER AND PANEL-PB.
49. DISCONNECT AND SCRAP (E) BRANCH CIRCUIT FEEDER #14 (120V, CMS CONTROLLER).
50. INSTALL NEW TYPE 1 (¾" C) CONDUIT WITH 2 #14 & 1 #14G.
51. (E) 2 #14 & 1 #14G TO EMERGENCY PANEL.
52. REPLACE EXISTING RED INDICATOR LIGHT WITH NEW RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.

PROJECT NOTES (RICHMOND - SAN RAFAEL)

E-2

SHEET	OF
2	17

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	76	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

RAMSEY J. HISSEN No. C-39608 Exp. 12/31/10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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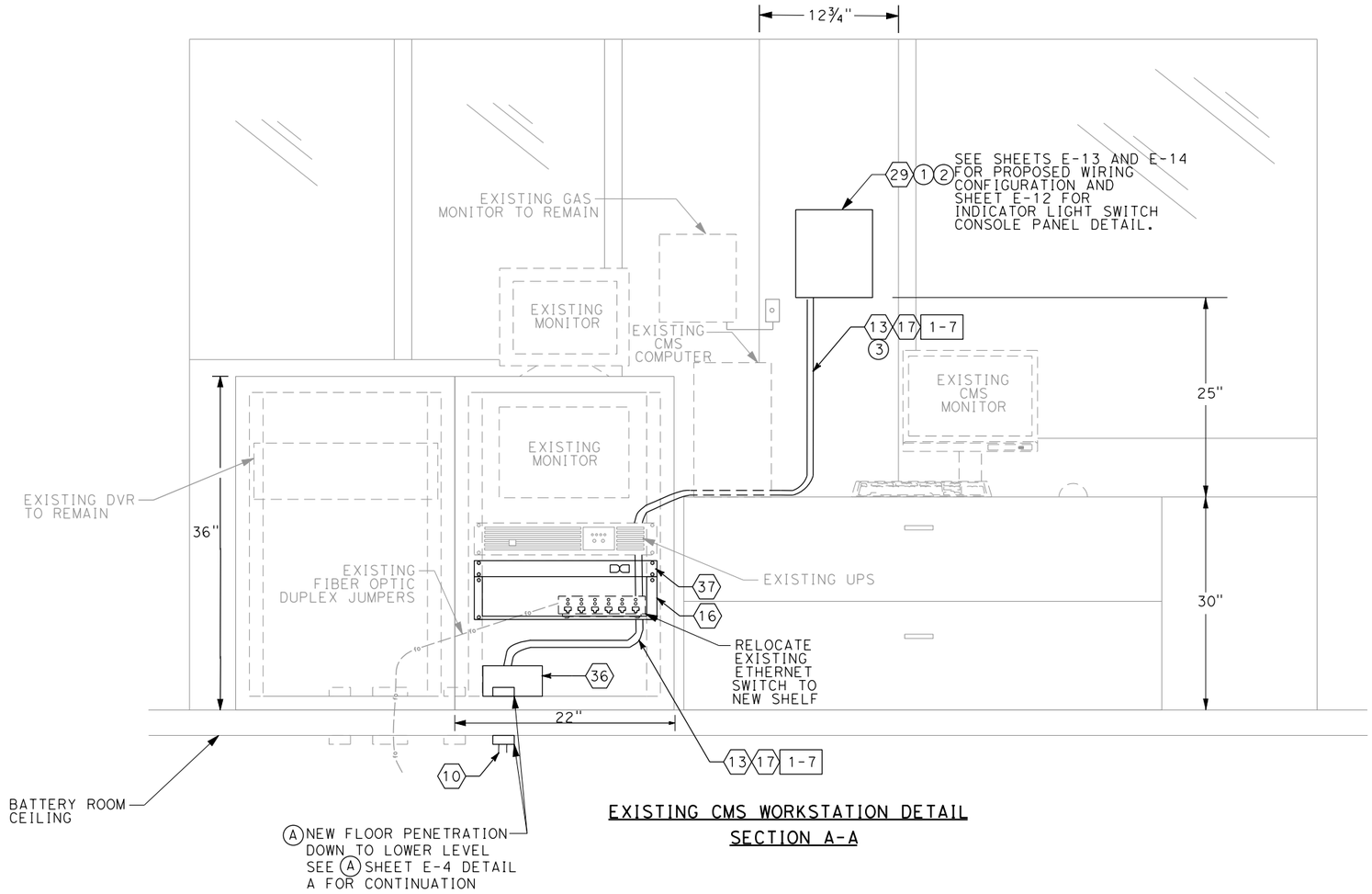
BAY AREA TOLL AUTHORITY
101 EIGHTH STREET
OAKLAND, CA 94607

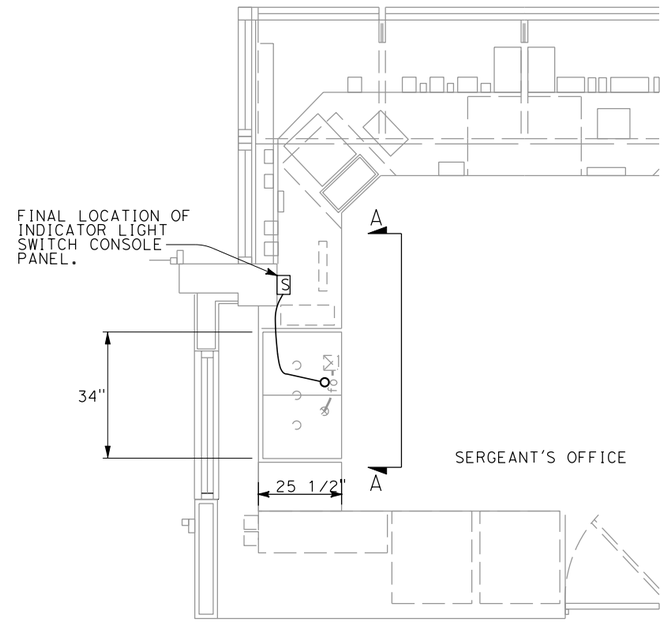
URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

SHEET NOTES:

1. ANY EXISTING FURNITURE REQUIRED TO TO BE RE-ARRANGED FOR PLACEMENT OF INDICATOR LIGHT SWITCH CONSOLE PANEL SHALL BE COORDINATED WITH TOLL SERGEANT.
2. INDICATOR LIGHT SWITCH CONSOLE PANEL TO BE MOUNTED VERTICALLY TO EXISTING COLUMN.
3. CONTRACTOR TO ROUTE ALL CABLES TO INDICATOR LIGHT SWITCH CONSOLE PANEL. SECURE CONDUIT TO WALL WITH FITTINGS AND FASTENERS.



EXISTING CMS WORKSTATION DETAIL
SECTION A-A



MAIN FLOOR - PARTIAL FLOOR PLAN VIEW

TOLL PLAZA OPERATIONS BUILDING
PARTIAL MAIN FLOOR PLAN
CONDUIT ROUTING
(RICHMOND - SAN RAFAEL)

NO SCALE

E-3

SHEET	OF
3	17

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04	CC	580	6.13	77	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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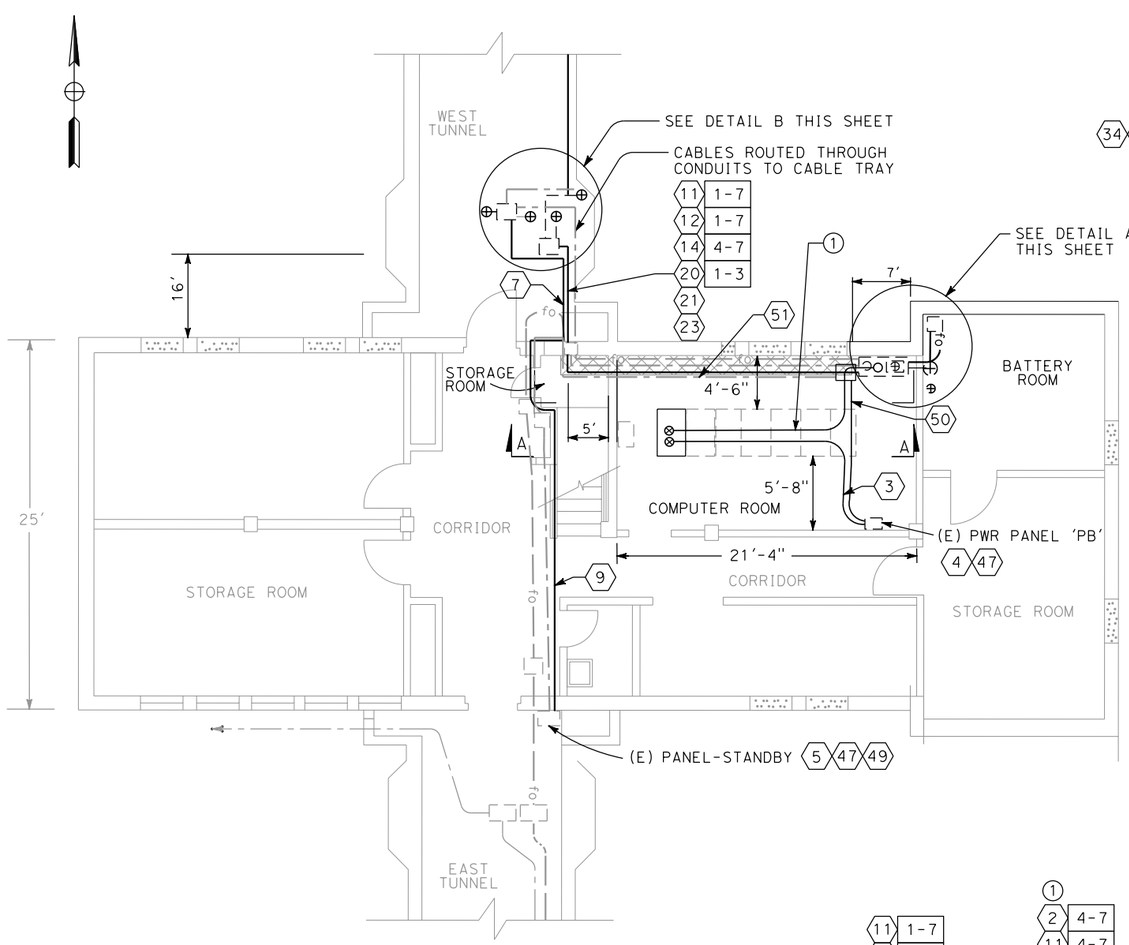
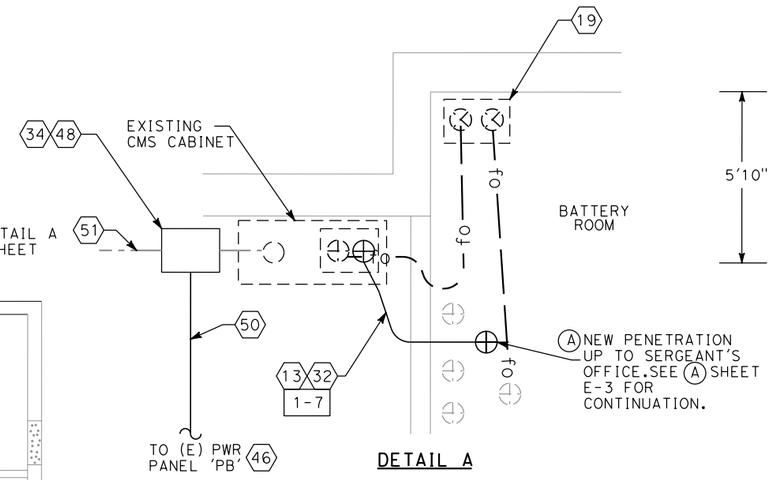
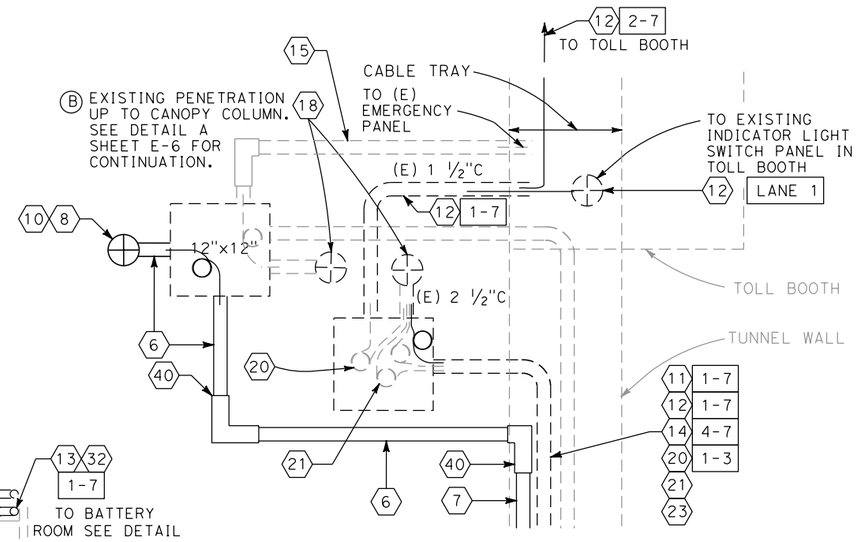
SAN JOSE, CA 95113



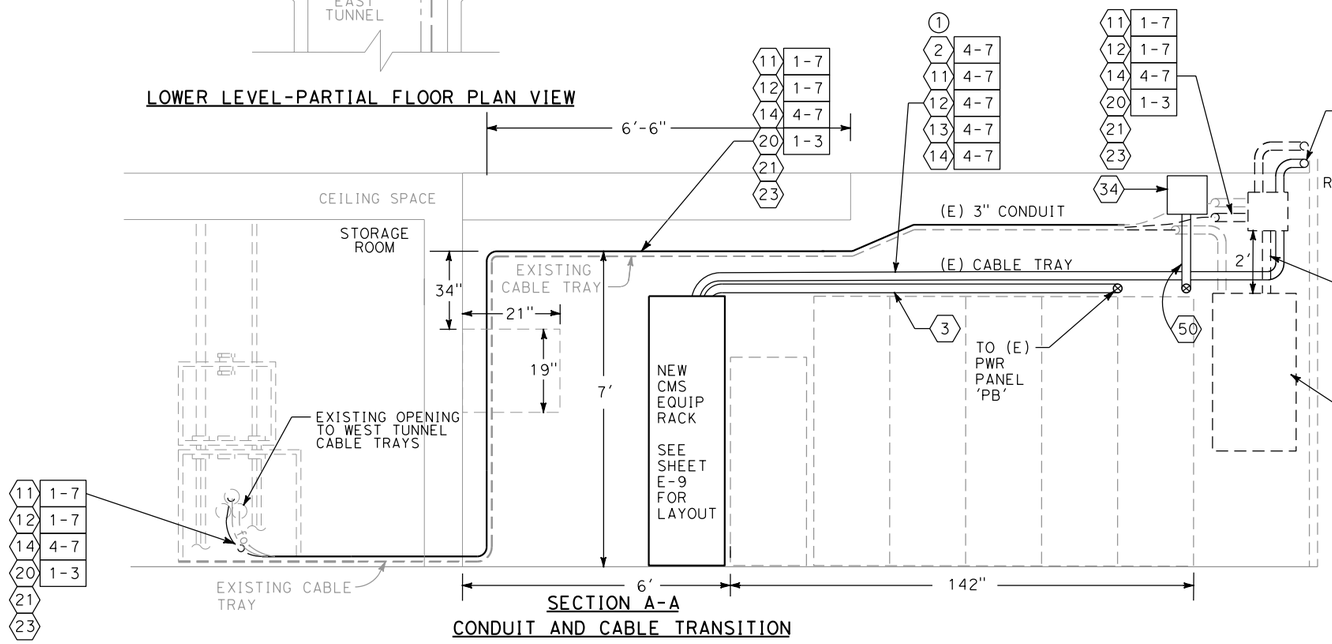
LOWER LEVEL-PARTIAL FLOOR PLAN VIEW



DETAIL A



DETAIL B
PARTIAL PLAN VIEW - WEST TUNNEL



SECTION A-A
CONDUIT AND CABLE TRANSITION

SHEET NOTES:

1. CONTRACTOR TO ROUTE COMMUNICATION CABLES ON EXISTING CABLE LADDER.

TOLL PLAZA OPERATIONS BUILDING
LOWER LEVEL CONDUIT ROUTING
(RICHMOND - SAN RAFAEL)

NO SCALE

E-4

SHEET	OF
4	17

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LAST REVISION 00-00-00

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	78	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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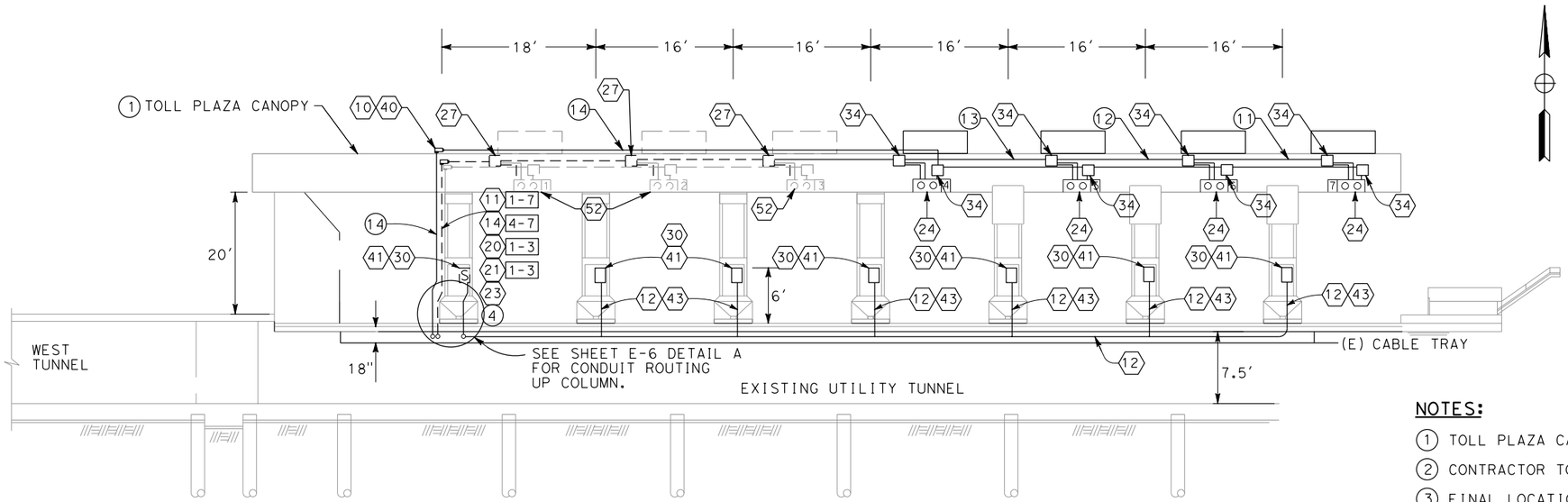
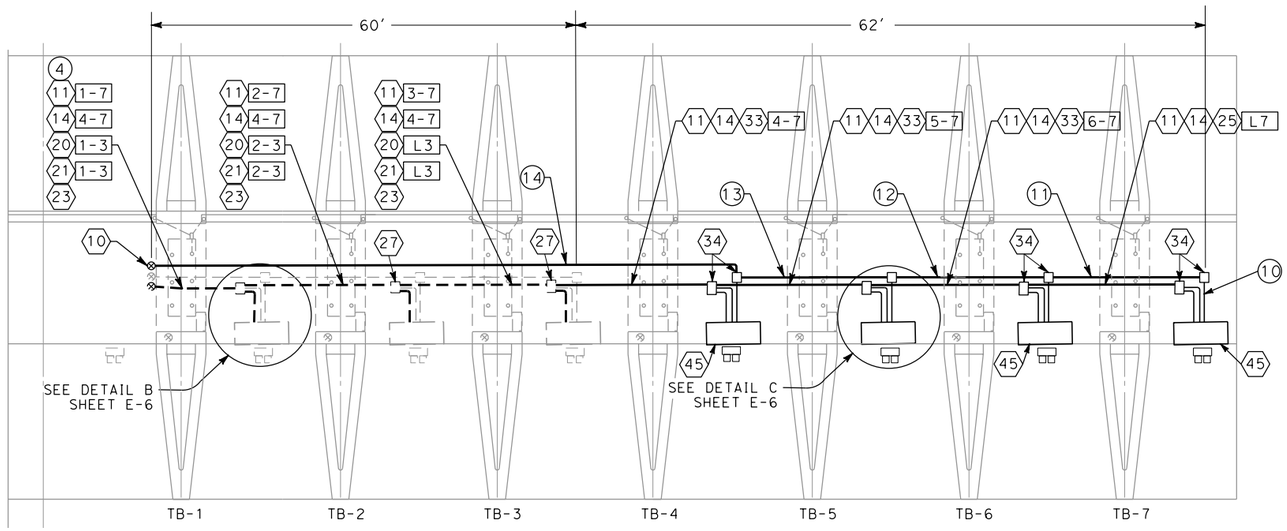
URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113



ELEVATION VIEW
WEST TUNNEL PLAN



PLAN VIEW - CANOPY ROOF

NOTES:

1. TOLL PLAZA CANOPY ROOF CONTAINS ASBESTOS.
2. CONTRACTOR TO PROVIDE CONDUIT SUPPORT.
3. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.
4. CONTRACTOR TO ROUTE NEW INDICATOR LIGHT CANOPY CABLE DOWN TO COMPUTER ROOM. SEE SHEET E-12 FOR PROPOSED WIRING CONFIGURATION.
5. EXISTING GREEN, BLACK, & WHITE CABLES TO BE REMOVED.
6. ROUTE CONDUIT UP THE SIDE OF THE COLUMN ALONG WITH EXISTING CONDUIT.
7. REMOVE AND SALVAGE EXISTING STATIC SIGNS IN LANES 4-7 AND INSTALL NEW CMS PANELS.
8. SEE S-1, S-2, AND S-3 SHEETS FOR CMS PANEL MOUNTING TO CANOPY DETAILS.
9. INTERCEPT EXISTING CONDUIT, CUT FLUSH AND INSTALL NEW JUNCTION BOX AND TERMINATE CONDUIT IN JUNCTION BOX.
10. INSTALL TYPE 4 (1") CONDUIT WITH 2 #12 & 1 #12G (120V, CMS POWER).
11. INSTALL TYPE 2 (1½" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS POWER).
12. INSTALL TYPE 2 (1½" C) CONDUIT WITH 4 #12 & 2 #12G (120V, CMS POWER).
13. INSTALL TYPE 2 (1½" C) CONDUIT WITH 6 #12 & 3 #12G (120V, CMS POWER).
14. INSTALL TYPE 2 (1½" C) CONDUIT WITH 8 #12 & 4 #12G (120V, CMS POWER)

TOLL PLAZA OPERATIONS BUILDING TUNNEL TO CANOPY CONDUIT ROUTING (RICHMOND - SAN RAFAEL)

NO SCALE

E-5

SHEET	OF
5	17

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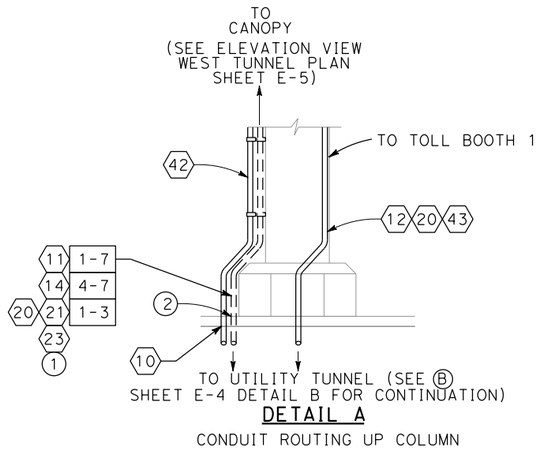
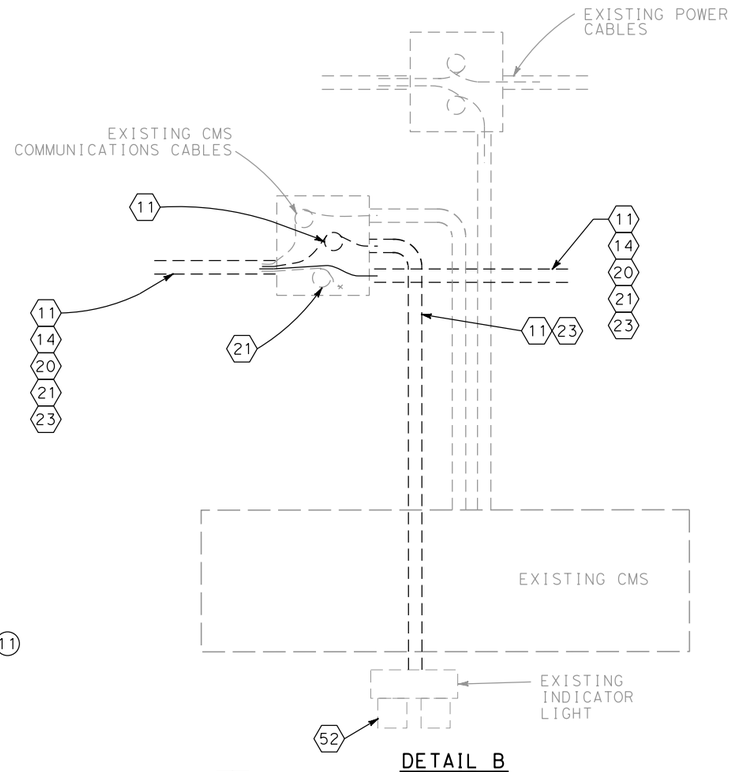


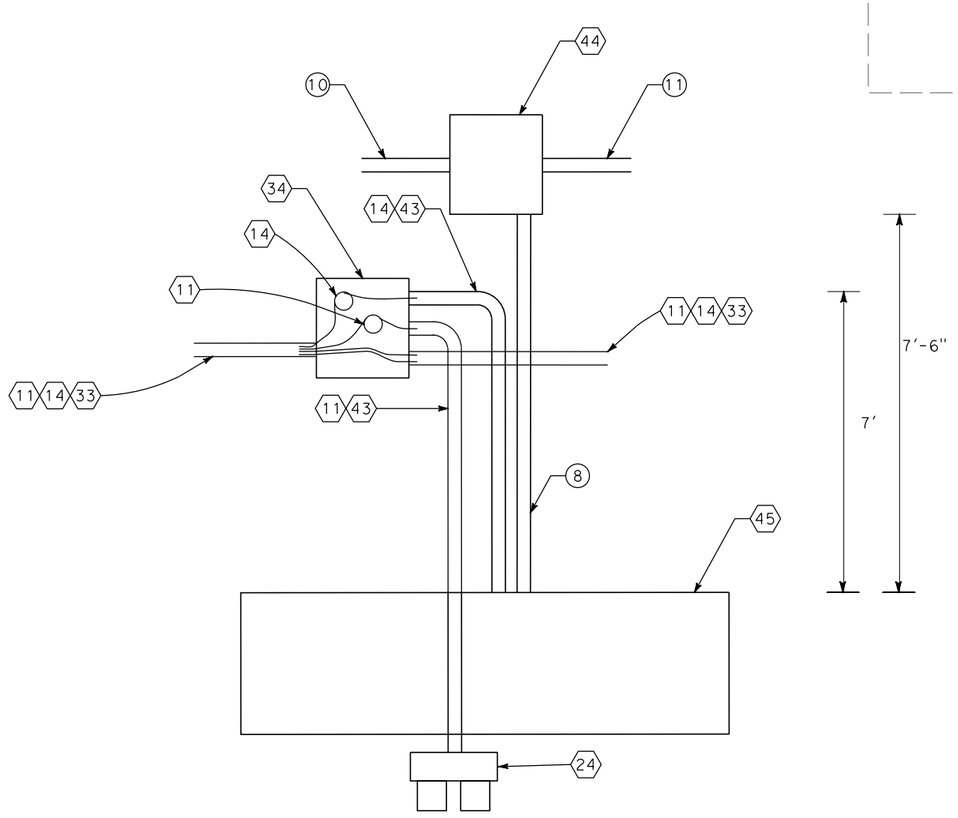
DETAIL A

CONDUIT ROUTING UP COLUMN



DETAIL B

(TYPICAL FOR LANES 1-3)



DETAIL C

(TYPICAL FOR LANES 4-7)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	79	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

RAMSEY J. HISSEN
No. C-39608
Exp. 12/31/10
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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NOTES

1. CONTRACTOR TO ROUTE NEW INDICATOR LIGHT CANOPY CABLE DOWN TO COMPUTER ROOM. SEE SHEETS E-13 AND E-14 FOR PROPOSED WIRING CONFIGURATION.
2. CONTRACTOR TO RE-SEAL CONDUIT PENETRATION DOWN TO TUNNEL.
3. CONTRACTOR TO PROVIDE CONDUIT SUPPORT.
4. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.
5. EXISTING GREEN, BLACK, & WHITE CABLES TO BE REMOVED.
6. ROUTE CONDUIT UP THE SIDE OF THE COLUMN ALONG WITH EXISTING CONDUIT.
7. INTERCEPT EXISTING CONDUIT, CUT FLUSH AND INSTALL NEW JUNCTION BOX AND TERMINATE CONDUIT IN JUNCTION BOX.
8. INSTALL TYPE 4 (1") CONDUIT WITH 2 #12 & 1 #12G (120V, CMS POWER)
9. INSTALL TYPE 1 JUNCTION BOX, SEE SHEET E-15 FOR DETAILS.
10. INSTALL TYPE 2 (1½" C) CONDUIT WITH 6 #12 & 3 #12G (120V, CMS POWER)
11. INSTALL TYPE 2 (1½" C) CONDUIT WITH 4 #12 & 2 #12G (120V, CMS POWER)

TOLL PLAZA OPERATIONS BUILDING CONDUIT ROUTING DETAILS (RICHMOND - SAN RAFAEL)

NO SCALE

E-6

SHEET	OF
6	17

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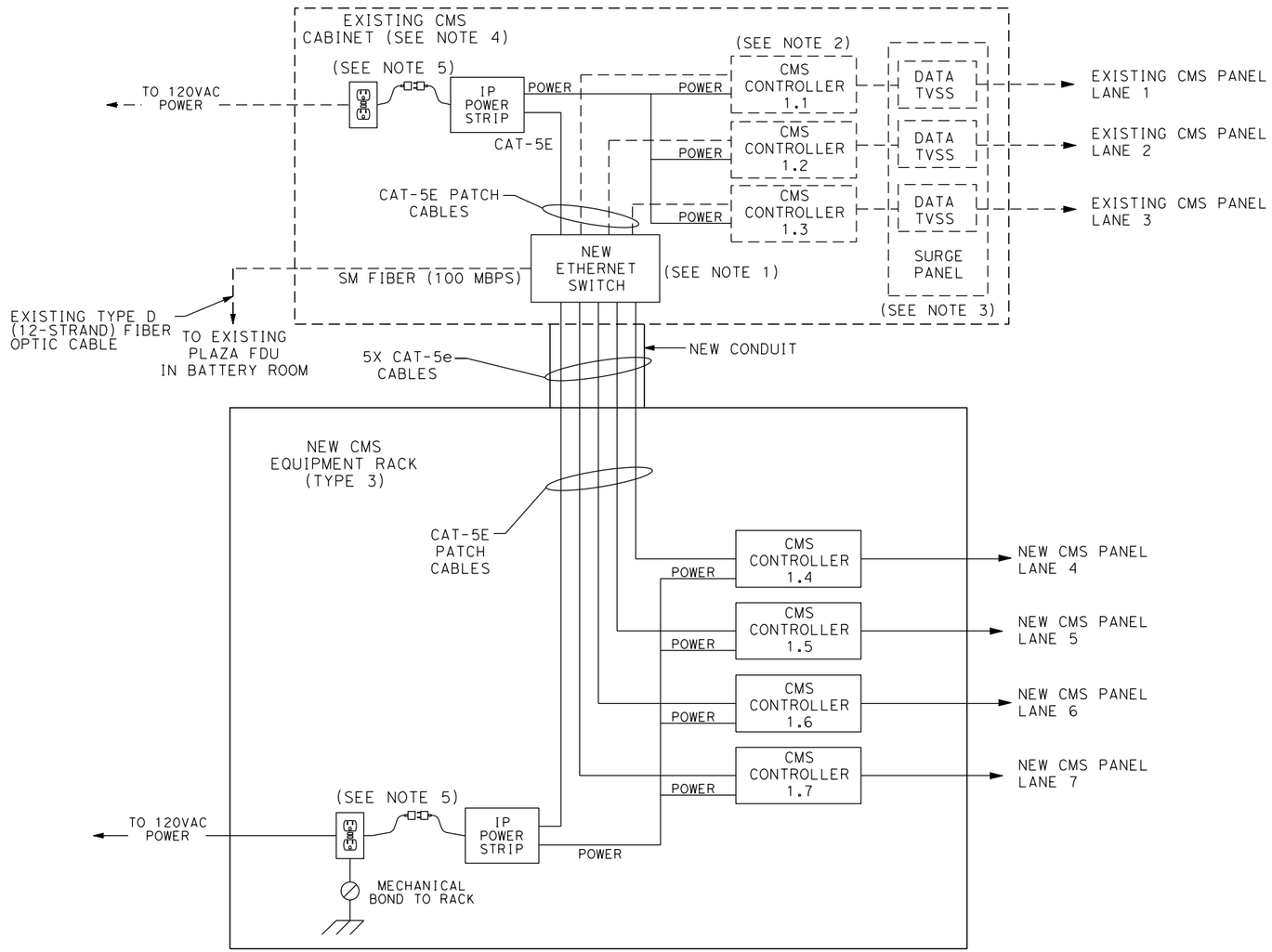

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	80	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

RAMSEY J. HISSEN No. C-39608 Exp. 12/31/10 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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SUITE 1500
SAN JOSE, CA 95113

NOTES:

1. EXISTING GARRETTCOM ETHERNET SWITCH LOCATED IN EXISTING CMS CABINET (LANES 1-3) SHALL BE RETURNED TO BATA AND REPLACED WITH NEW RACK MOUNTABLE SWITCH WITH MINIMUM 14-10/100 BASE-TX AND 2-100BASE-FX PORTS. FIBER PORTS TO MATCH EXISTING.
2. EXISTING CMS CONTROLLERS LOCATED IN EXISTING CMS CABINET (LANES 1-3) SHALL BE REPLACED WITH NEW CMS CONTROLLERS TO BE PROVIDED WITH INTERNAL SURGE PROTECTION PER MANUFACTURER'S SPECS.
3. EXISTING CMS TVSS TO BE REMOVED. OLD TVSS SHALL BE RETURNED TO BATA.
4. REPLACE EXISTING POWER STRIP WITH NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP.
5. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.

CMS SYSTEM SCHEMATIC (RICHMOND-SAN RAFAEL)

NO SCALE

E-7

SHEET	OF
7	17

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	81	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

RAMSEY J. HISSEN
No. C-39608
Exp. 12/31/10
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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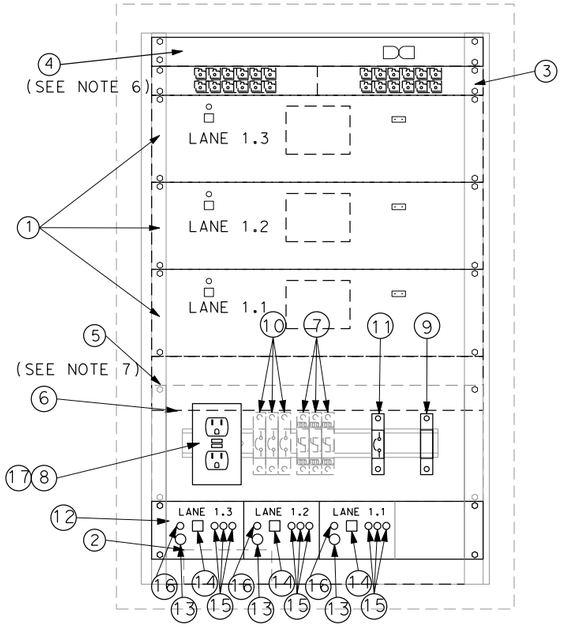
COMPUTER ROOM



PLAZA CABINET #1

ITEM	COMPONENT
①	EXISTING CMS CONTROLLER TO BE REMOVED/REPLACED
②	REMOVE EXISTING ETHERNET SWITCH AT CABINET BOTTOM. FURNISH AND INSTALL NEW RACK MOUNTABLE SWITCH WITH 14-10/100BASE-T AND 2-100BASE-FX(SM) PORTS. FIBER PORT TO MATCH EXISTING. INSTALL NEW SWITCH RIGHT UNDER CMS CONTROLLER (RACK MOUNTED-NO SHELVES).
③	EXISTING PLAZA PATCH PANEL
④	POWER STRIP TO BE REMOVED/REPLACED
⑤	EXISTING UPS TO BE REMOVED
⑥	EXISTING ELECTRICAL PANEL
⑦	EXISTING DATA TVSS TO BE REMOVED
⑧	INSTALL NEW 15 AMP GFI OUTLET
⑨	REMOVE EXISTING TRANSFORMER AND REPLACE WITH ONE (1)NEW 120V,100W, 1:1, NEC TYPE 3 TRANSFORMER.
⑩	REMOVE EXISTING 1/4 AMP BREAKERS
⑪	ONE (1) NEW 2 AMP BREAKER (120 VAC)
⑫	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS.
⑬	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
⑭	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
⑮	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
⑯	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120 VAC) FOR POWER INDICATION.
⑰	REMOVE EXITING 15 AMP OUTLET

DETAIL A
EXISTING TOLL PLAZA CABINET ELEVATION

NOTES:

1. EQUIPMENT TO MEET CALTRANS TEES REQUIREMENTS.
2. ALL REMOVED EQUIPMENT AND MATERIALS SHALL BE COORDINATED WITH BATA.
3. CONTRACTOR TO REMOVE EXISTING TYPE 3 TRANSFORMER FROM PLAZA CABINETS.
4. CONTRACTOR TO REMOVE EXISTING 1/4 AMP BREAKERS.
5. EXISTING CMS TVSS TO BE REMOVED AND SALVAGE. CONTROLLER TO BE PROVIDED WITH INTERNAL SURGE PROTECTION PER MANUFACTURER'S SPECS.
6. EXISTING POWER STRIP TO BE REPLACED WITH NEW IP ADDRESSABLE RACK MOUNTABLE POWER STRIP. CONTRACTOR TO CONNECT ETHERNET CABLE TO NEW SWITCH.
7. EXISTING UPS TO BE REMOVED AND RETURNED TO BATA CONTRACTOR TO CONNECT CMS CONTROLLERS TO PANEL 'PB' UPS POWER.
8. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
9. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS (I.E., TRANSFORMERS, BREAKERS, ETC.).
10. EXISTING CMS CONTROLLER TO BE REPLACED WITH NEW CONTROLLER. NEW CMS CONTROLLER TO BE PROVIDED BY BATA.
11. CONTRACTOR TO LEAVE ONE (1) RACK UNIT OF SPACE AT BOTTOM OF CABINET.
12. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.

CMS PLAZA CABINET ELEVATION VIEW FOR LANES 1-3 (RICHMOND-SAN RAFAEL) E-8

NO SCALE

SHEET	OF
8	17

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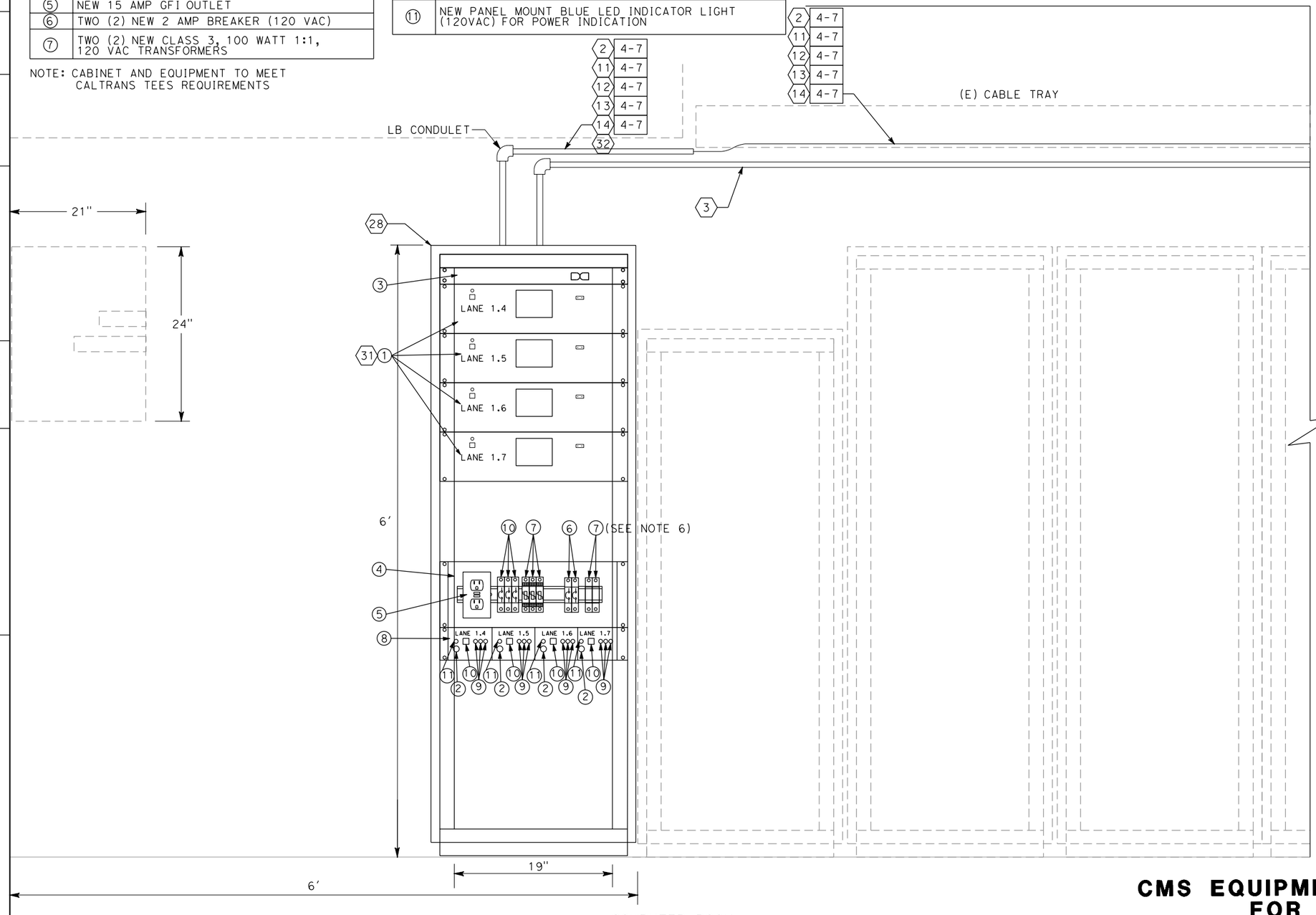
ITEM	COMPONENT
①	NEW CMS CONTROLLER
②	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
③	NEW IP ADDRESSABLE POWER STRIP
④	NEW ELECTRICAL PANEL
⑤	NEW 15 AMP GFI OUTLET
⑥	TWO (2) NEW 2 AMP BREAKER (120 VAC)
⑦	TWO (2) NEW CLASS 3, 100 WATT 1:1, 120 VAC TRANSFORMERS

ITEM	COMPONENT
⑧	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS. SEE SHEET E-17 FOR CABINET DRAWER LAYOUT.
⑨	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
⑩	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
⑪	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION

NOTE: CABINET AND EQUIPMENT TO MEET CALTRANS TEES REQUIREMENTS



COMPUTER ROOM

SHEET NOTES:

1. ANY EXISTING FURNITURE REQUIRED TO BE RE-ARRANGED FOR PLACEMENT OF CMS EQUIPMENT RACK SHALL BE COORDINATED WITH LIEUTENANT.
2. SECURE CONDUIT TO EXISTING CABLE TRAY USING CONDUIT CLAMPS OR CHANNEL STRUTS. SEE SHEET E-15 FOR TYP CONDUIT MOUNTING.
3. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
4. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS (I.E., TRANSFORMERS, BREAKERS, ETC.).
5. NEW IP ADDRESSABLE POWER STRIP TO BE RACK MOUNTABLE.
6. CONTRACTOR TO CONNECT TWO (2) LANES TO ONE TRANSFORMER AND TWO (2) LANES TO THE OTHER TRANSFORMER.
7. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.

CMS EQUIPMENT RACK LAYOUT FOR LANES 4-7 (RICHMOND - SAN RAFAEL)

NO SCALE

E-9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	82	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp.12/31/10 CIVIL — STATE OF CALIFORNIA

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SHEET	OF
9	17

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	83	123

Carol Light
REGISTERED CIVIL ENGINEER — 3/12/10 DATE

REGISTERED PROFESSIONAL ENGINEER
CAROL LIGHT
No. 10145
Exp. 09/30/11
ELECTRICAL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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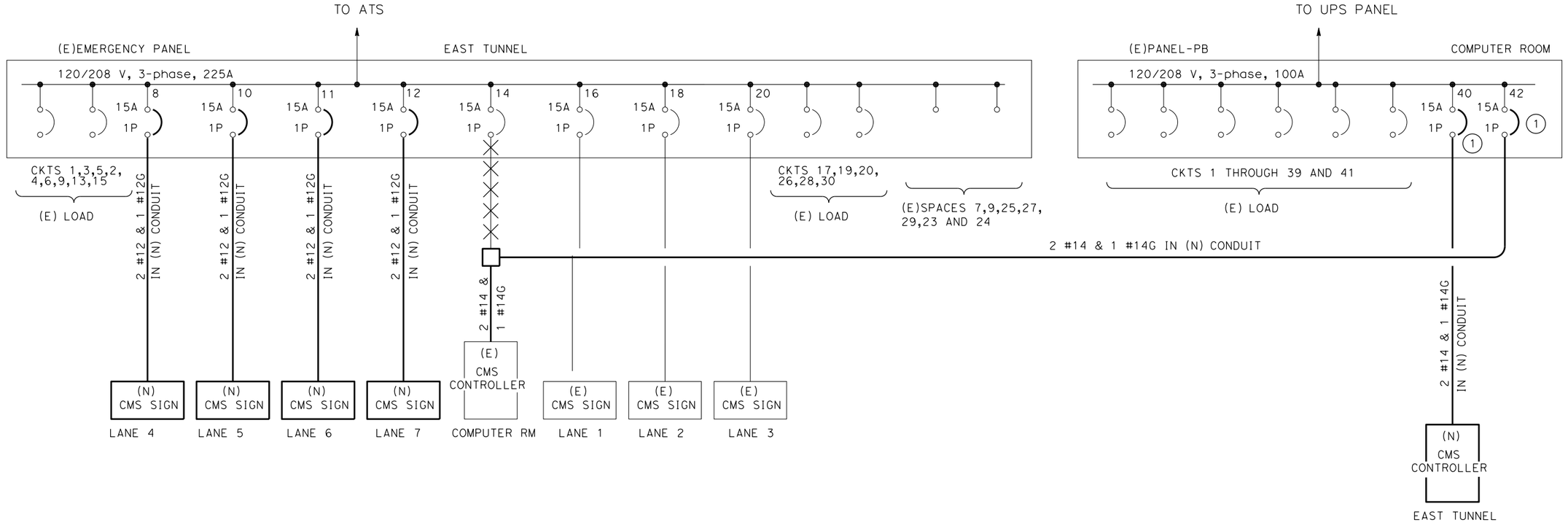
SUITE 1500
SAN JOSE, CA 95113

NOTES:

1. INSTALL NEW CIRCUIT BREAKER IN EXISTING SPACE.
2. THE CMS CABINET AND SIGNS SHALL BE CONNECTED TO THE BUILDING GROUNDING SYSTEM BY THE EQUIPMENT GROUND CONDUCTOR IN EACH CONDUIT.
3. ALL METAL PARTS OF THE SYSTEM SHALL BE BONDED TOGETHER PER CONTRACT SPECIFICATIONS.



PARTIAL ONE LINE DIAGRAM (RICHMOND - SAN RAFAEL)

NO SCALE

E-10

SHEET	OF
10	17

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04	CC	580	6.13	84	123

Carol Light 3/12/10
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — CAROL LIGHT No. 10145 Exp. 09/30/11 ELECTRICAL — STATE OF CALIFORNIA

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NOTES:

(1) CONTRACTOR TO UPDATE BREAKER PANEL BOARD SCHEDULE AND PROVIDE A NEW TYPED WRITTEN PANEL BOARD SCHEDULE.

(E) STANDBY PANEL

PROJECT: BATA TO12 TOLL PLAZAS CMS
RICHMOND/ SAN RAFAEL BRIDGE

LOCATION: EAST TUNNEL

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(E) NEON SIGN				30		1	A	2	100					(E) TOLL BOOTH LIGHTING
ABUTMENT FLASHER						3	B	4						(E) TOLL BOOTH LIGHTING
					3	5	C	6		3				(E) TOLL BOOTH LIGHTING
(E) SPACE					1	7	A	8	15	1			0.50	(N) CMS SIGN LN 4
(E) SPACE					1	9	B	10	15	1			0.50	(N) CMS SIGN LN 5
(N) CMS SIGN LN 6			0.50	15	1	11	C	12	15	1			0.50	(N) CMS SIGN LN 7
(E) NORTH TUNNEL LTS				20	1	13	A	14	15	1				(N) SPARE
(E) ELEC. DOOR				20	1	15	B	16	15	1				(E) CMS SIGN #1
(E) SPACE					1	17	C	18	15	1				(E) CMS SIGN #3
(E) WAD				50		19	A	20	15	1				(E) CMS SIGN #2
(E) WAD						21	B	22						(E) SPACE
(E) WAD					3	23	C	24						(E) SPACE
(E) SPACE					1	25	A	26	40					(E) UPS
(E) SPACE					1	27	B	28						
(E) SPACE					1	29	C	30		3				
								32	125					(E) PANEL UPS
								34						
								36		3				
TOTALS SECTION 1	0.00	0.00	0.50								0.00	0.00	1.50	

VOLTAGE: 120/208V
PHASE/WIRE: 3 PHASE / 4 WIRE
RATING: 225A
MAINS: 225A- 3P
MOUNTING:
A.I.C.:
BUS SIZE:

LOAD SUMMARY

	CONNECT LOAD	DEMAND FACTOR	DEMAND LOAD
	0.00	125% OF LOAD	0.00
	0.00	NEC 220-13	0.00
	2.00	1.00	2.00
	2.00 KVA		2.00 KVA
	5.6 AMPS		5.6 AMPS

BALANCE:	(KVA)	%	AMPS:
PHASE A:	0.50	25.00	1.39
PHASE B:	0.50	25.00	1.39
PHASE C:	1.00	50.0	2.78

ADDITIONAL FEATURES:

S&L JOB #: 28016

(E) PANEL PB

PROJECT: BATA TO12 TOLL PLAZA CMS
RICHMOND/ SAN RAFAEL BRIDGE

LOCATION: COMPUTER ROOM

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(E) COMPUTER RACK EQPT				20	1	1	A	2	20	1				(E) COMPUTER RACK EQPT
(E) COMPUTER RACK EQPT				20	1	3	B	4	20	1				(E) COMPUTER RACK EQPT
(E) COMPUTER RACK EQPT				20	1	5	C	6	20	1				(E) SPARE
(E) COMPUTER RACK EQPT				20	1	7	A	8	20	1				(E) COMPUTER RACK EQPT
(E) COMPUTER RACK EQPT				20	1	9	B	10	20	1				(E) COMPUTER RACK EQPT
(E) COMPUTER RACK EQPT				20	1	11	C	12	20	1				(E) SPARE
(E) COMPUTER RACK EQPT				20	1	13	A	14	20	1				(E) COMPUTER RACK EQPT
(E) COMPUTER RACK EQPT				20	1	15	B	16	20	1				(E) COMPUTER RACK EQPT
(E) COMPUTER RACK EQPT				20	1	17	C	18	20	1				(E) COMPUTER RACK EQPT
(E) COMPUTER RACK EQPT				20	1	19	A	20	20	1				(E) COMPUTER RACK EQPT
(E) VDS RELAY PANEL				20	1	21	B	22	20	1				(E) RACK EQPT. OUTLETS
(E) VDS RELAY PANEL				20	1	23	C	24	20	1				
(E) VDS RELAY PANEL				20	1	25	A	26	20	1		0.36		(E) RECEPT- CAPTAIN'S OFFICE
(E) VDS RELAY PANEL				20	1	27	B	28	20	1				(E) SPARE
(E) FIRE ALARM PANEL			0.20	20	1	29	C	30	20	1		0.36		(E) RECEPT- SGT OFFICE
(E) FIRE DAMPER			0.10	20	1	31	A	32	20	1				(E) RECEPT- OPERATION CTR.
				20	1	33	B	34	20	1				(E) RECEPT- UPS STORAGE ROOM
				20	1	35	C	36	20	1				
				20	1	37	A	38	20	1				
				20	1	39	B	40	15	1			0.60	(N) CMS EQUIP RACK
				20	1	41	C	42	15	1			0.60	(E) CMS CAB #1
TOTALS SECTION 1	0.00	0.00	0.30								0.00	0.72	1.20	

VOLTAGE: 120/208V
PHASE/WIRE: 3 PHASE / 4 WIRE
RATING: 225A
MAINS: MAIN LUG ONLY
MOUNTING: SURFACE
A.I.C.:
BUS SIZE: 225A

LOAD SUMMARY

	CONNECT LOAD	DEMAND FACTOR	DEMAND LOAD
	0.00	125% OF LOAD	0.00
	0.72	NEC 220-13	0.72
	1.50	1.00	1.50
	2.22 KVA		2.22 KVA
	6.2 AMPS		6.2 AMPS

BALANCE:	(KVA)	%	AMPS:
PHASE A:	0.46	20.72	1.28
PHASE B:	0.60	27.03	1.67
PHASE C:	1.16	52.25	3.22

ADDITIONAL FEATURES:

S&L JOB #: 28016

STANDBY AND PB PANELBOARD SCHEDULES (RICHMOND - SAN RAFAEL)

NO SCALE

E-11

SHEET	OF
11	17

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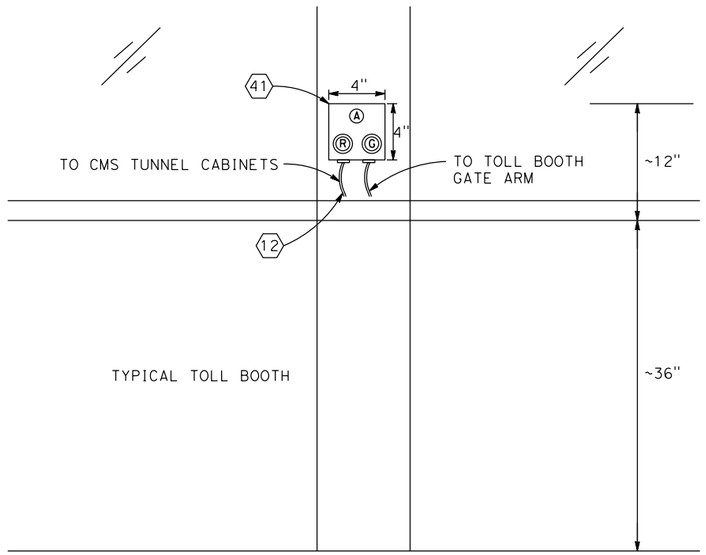

NEW TOLL BOOTH INDICATOR LIGHT SWITCH BOX

LEGEND

- (R) PANEL MOUNT MOMENTARY RED LED ILLUMINATED PUSH BUTTON SWITCH
- (G) PANEL MOUNT MOMENTARY GREEN LED ILLUMINATED PUSH BUTTON SWITCH
- (A) PANEL MOUNT MOMENTARY AMBER LED ILLUMINATED PUSH BUTTON SWITCH
- (A) AMBER INDICATOR LED LIGHT

NOTES:

1. SIZE OF CONSOLE SWITCH PANEL WILL BE FIELD DETERMINED BY CONTRACTOR TO ACCOMMODATE NUMBER OF LANES.
2. SEE SHEET E-3 FOR LOCATION OF SWITCH CONSOLE PANEL.
3. SEE SHEETS E-13 TO E-14 FOR PROPOSED WIRING CONFIGURATION.
4. CONTRACTOR TO LABEL PUSH BUTTON SWITCH WITH R, G, AND A LETTERS FOR RED, GREEN, AND AMBER LANE INDICATION.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	85	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

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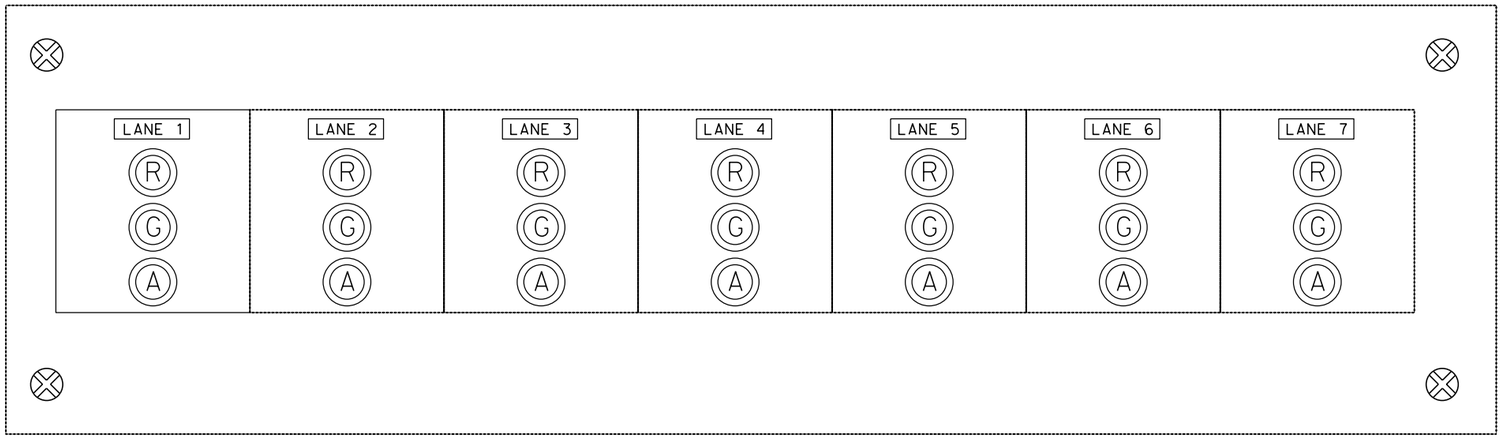

NEW INDICATOR LIGHT SWITCH CONSOLE PANEL

INDICATOR LIGHT SWITCH CONSOLE PANEL AND TOLL BOOTH INDICATOR SWITCH BOX (RICHMOND-SAN RAFAEL)

NO SCALE

E-12

SHEET	OF
12	17

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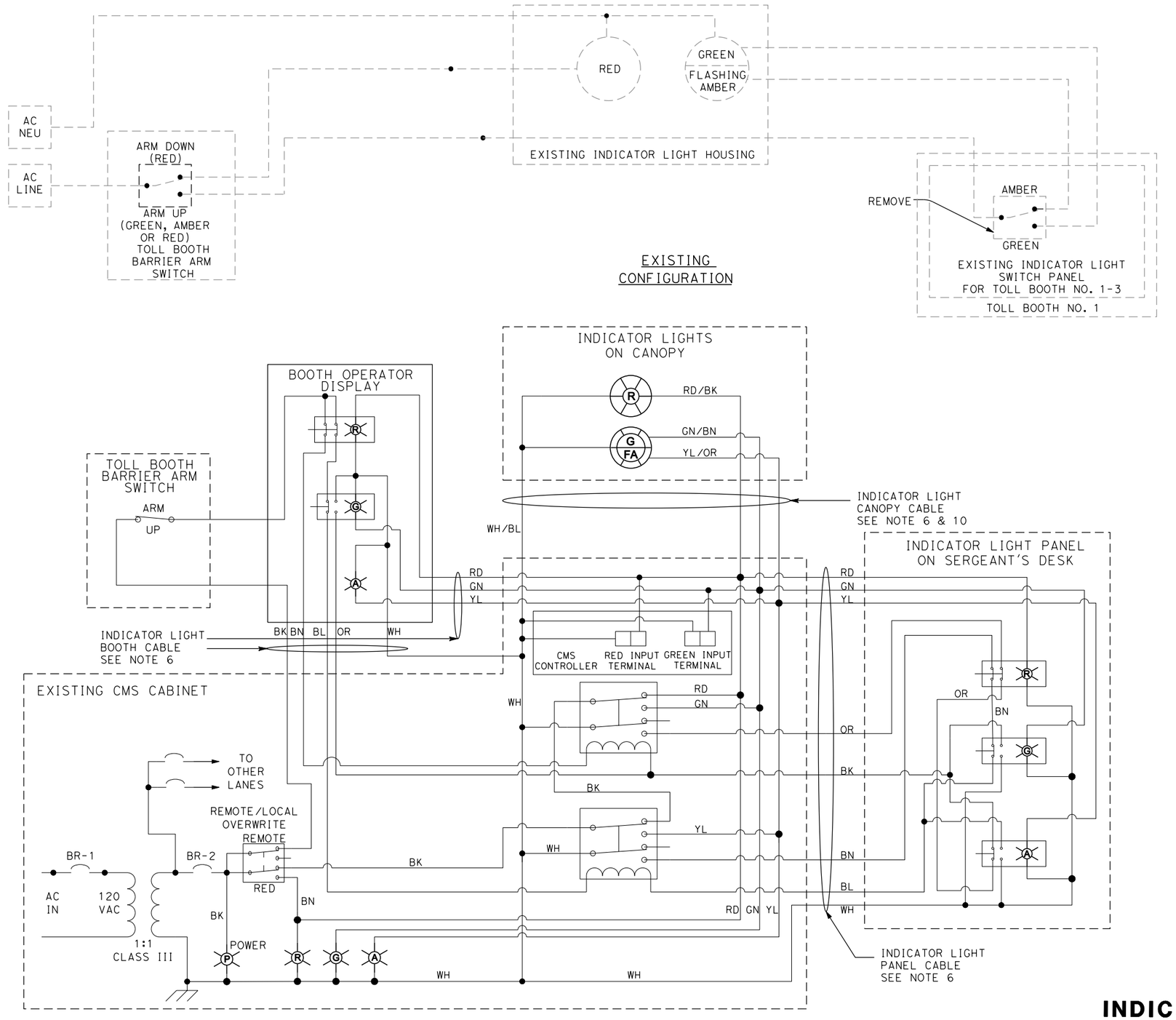

LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 ½ AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 8)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)

NOTES:

1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-12 FOR INDICATOR LIGHT SWITCH CONSOLE DETAIL.
3. INTERCEPT EXISTING GATE ARM CABLE IN TOLL BOOTH.
4. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP.
5. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
6. BELDEN 5506UE CABLE OR APPROVED EQUIVALENT.
7. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
8. ONE (1) ½ AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) ½ AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 CMS CONTROLLERS.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHTS ON CANOPY.

INDICATOR LIGHT WIRING DIAGRAM FOR LANES 1-3 (RICHMOND - SAN RAFAEL)

NO SCALE

E-13

SHEET	OF
13	17

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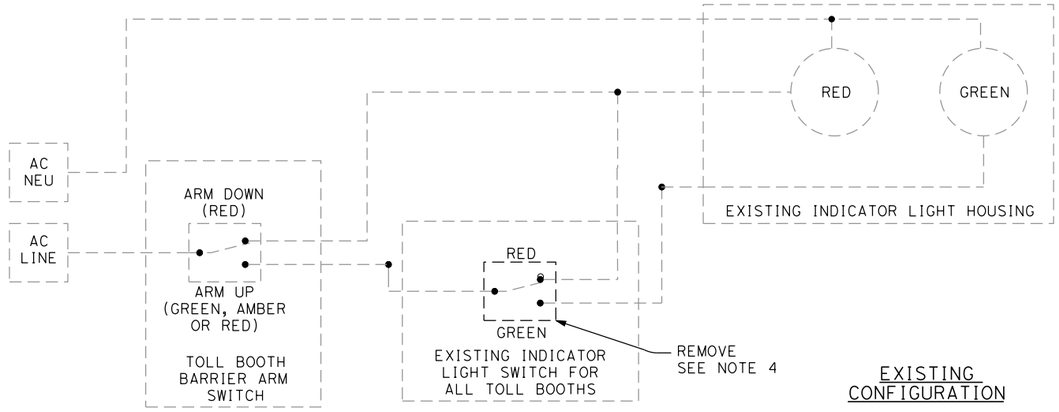
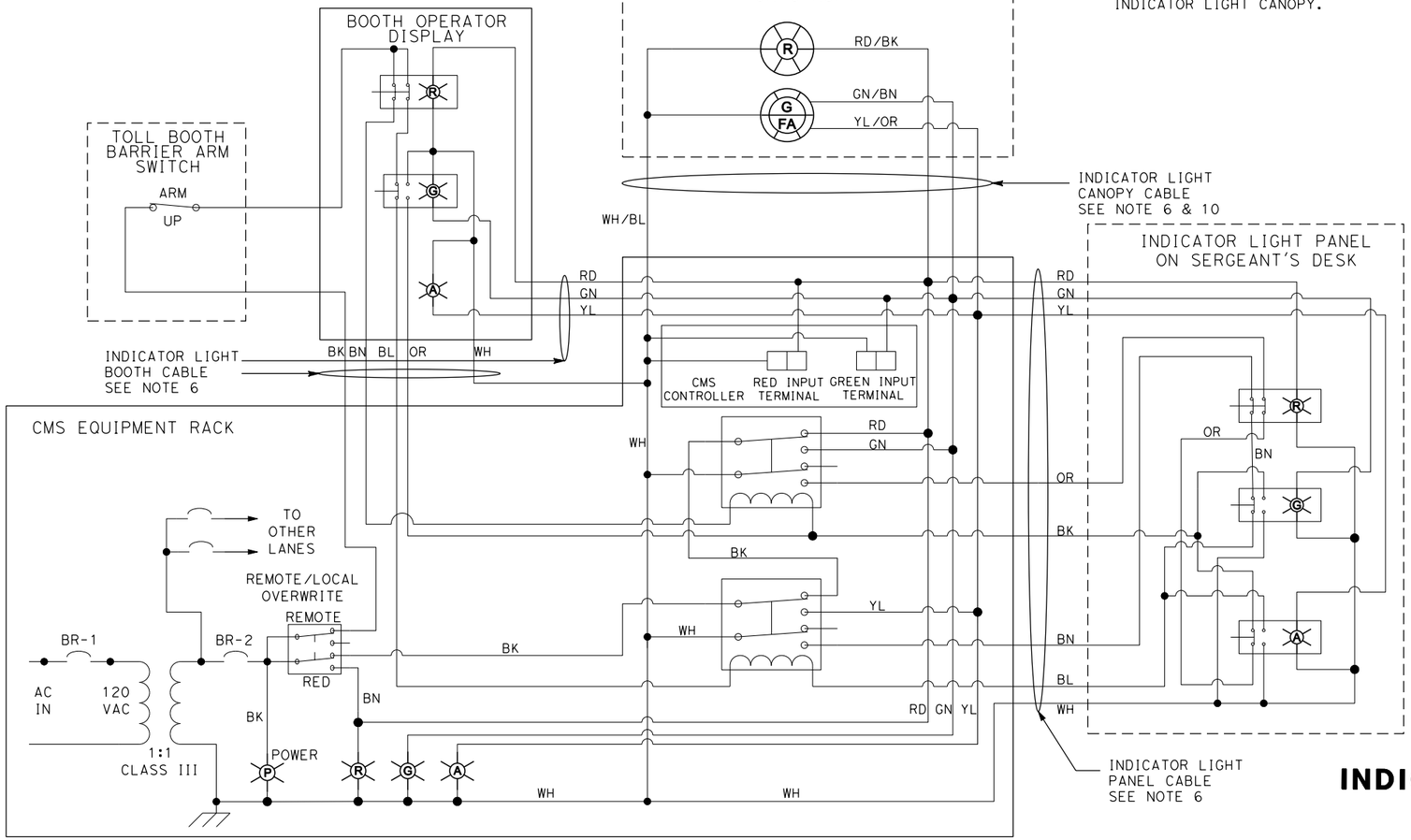


EXISTING CONFIGURATION



PROPOSED CONFIGURATION

NOTES:

1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-12 FOR INDICATOR LIGHT SWITCH CONSOLE DETAIL.
3. INTERCEPT EXISTING GATE ARM CABLE IN TOLL BOOTH.
4. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP. ONE TRANSFORMER PER CMS CABINET.
5. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
6. BELDEN 5506UE CABLE OR APPROVED EQUIVALENT.
7. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
8. ONE (1) ½ AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) ½ AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 CMS CONTROLLERS.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHT CANOPY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	87	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

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LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- ▣ CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 ½ AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 8)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)

INDICATOR LIGHT WIRING DIAGRAM FOR LANES 4-7 (RICHMOND - SAN RAFAEL)

NO SCALE

E-14

SHEET	OF
14	17

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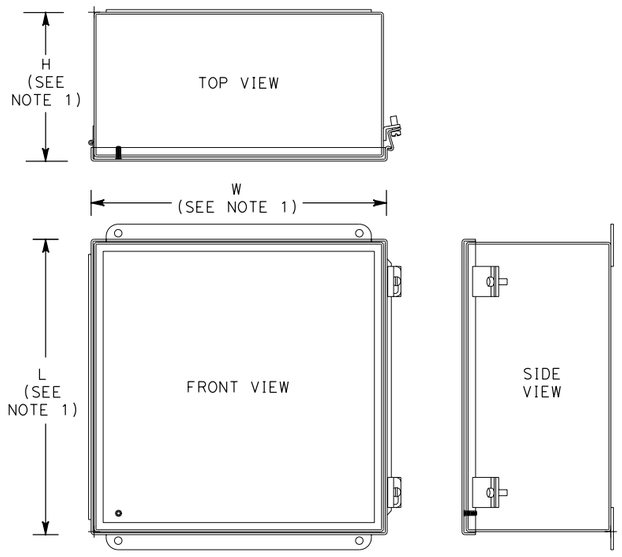
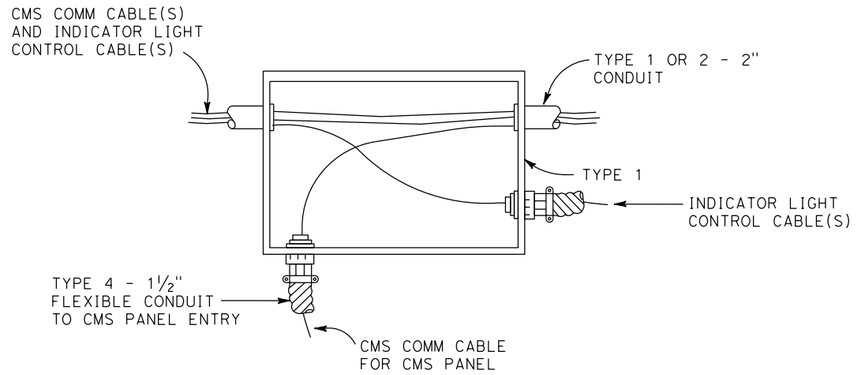
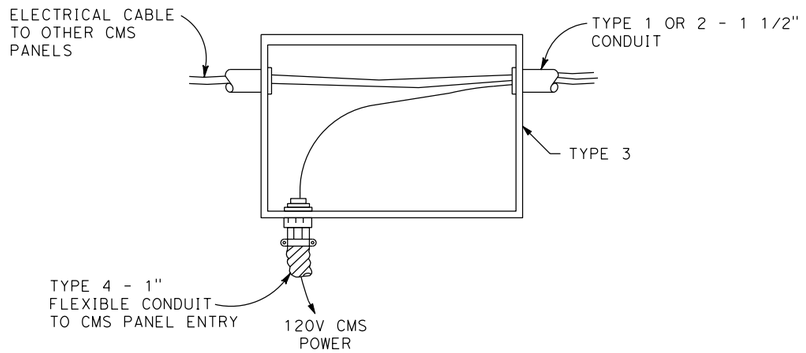


NEMA 4X JUNCTION BOX
(SHOWN WITH HINGE)





NOTES:

1. TYPE 1 NEMA 4X JUNCTION BOX (12"L X 12"W X 6"D, TYP.) OR AS REQ'D.
   TYPE 3 NEMA 4X JUNCTION BOX (5"L X 6"W X 4"D, TYP.) OR AS REQ'D.
2. MINIMUM SIZES OF JUNCTION BOXES SHOWN. CONTRACTOR SHALL CONFIRM SIZES AND QUANTITIES IN FIELD AND SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.
3. FOR JUNCTION BOX MOUNTED ON EXISTING CONCRETE WALLS OR SURFACE FLOOR MOUNTED USE ⅜" EXPANSION ANCHORS, TOTAL OF 4 FOR EACH BOX.
4. COIL A MINIMUM OF 3' OF CABLE FOR EACH DEVICE IN THE TYPE 1 AND TYPE 3 JUNCTION BOXES.
5. SEE SHEETS E-13 AND E-14 FOR INDICATOR LIGHT WIRING DIAGRAMS.

JUNCTION BOX DETAILS (RICHMOND - SAN RAFAEL)

NO SCALE

E-15

SHEET	OF
15	17

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04	CC	580	6.13	89	123

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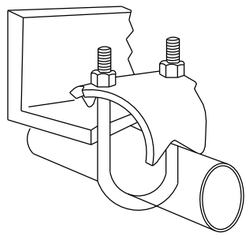
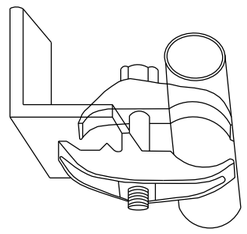
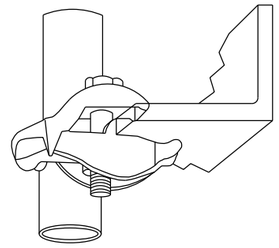


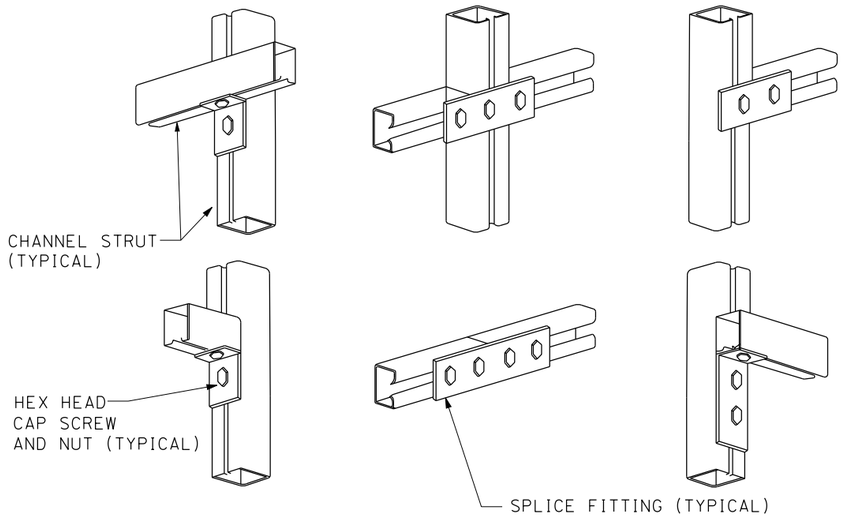
FOR MOUNTING PIPES OR CONDUIT AT RIGHT ANGLES TO THE BEAM DETAIL



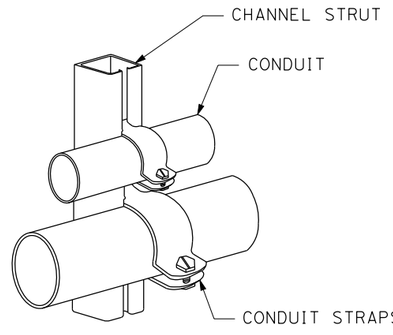
FOR MOUNTING PIPES OR CONDUIT PARALLEL TO THE BEAM DETAIL

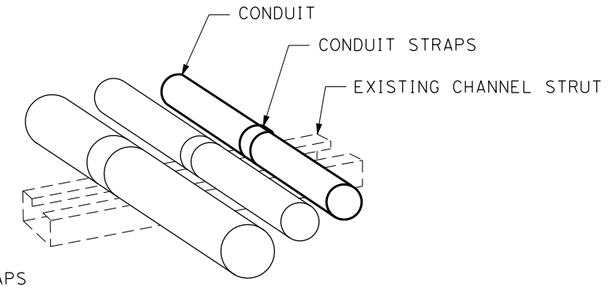


FOR MOUNTING PIPES OR CONDUIT VERTICALLY ACROSS BEAM EDGE DETAIL



TYPICAL EQUIPMENT SUPPORT CHANNEL, FITTINGS AND FASTENERS





MOUNTING ON STRUT DETAILS

CONDUIT MOUNTING AND ATTACHMENT DETAILS (RICHMOND - SAN RAFAEL)

NO SCALE

E-16

SHEET	OF
16	17

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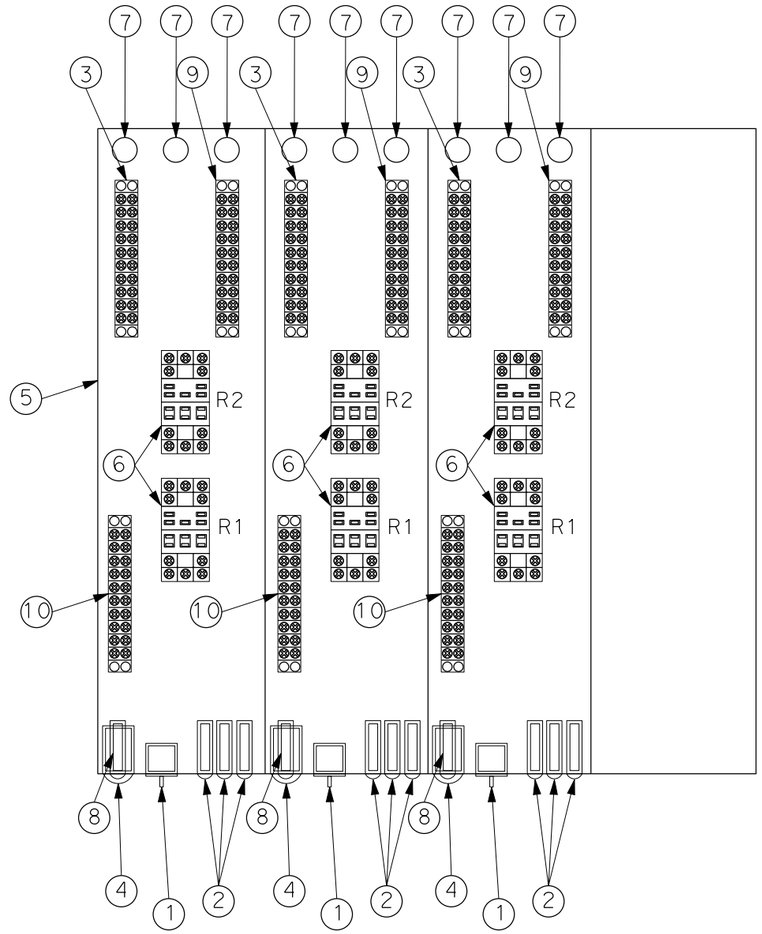
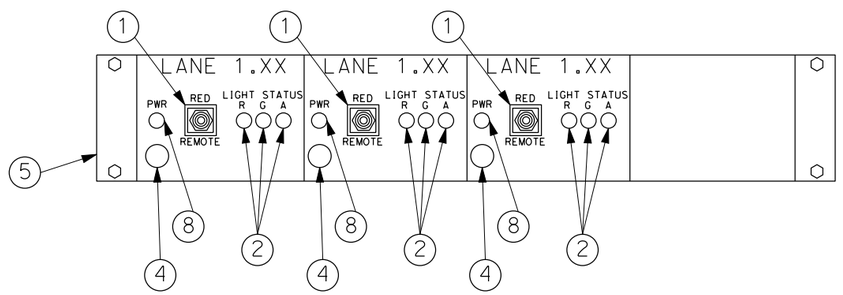
ITEM	COMPONENT
1	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
2	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
3	TERMINAL BLOCKS FOR INDICATOR LIGHT CANOPY CABLE AND POWER
4	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
5	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS.
6	TWO (2) NEW DPDT RELAYS
7	DRILLED HOLES AT BOTTOM OF DRAWER FOR INDICATOR LIGHT CABLE
8	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION
9	TERMINAL BLOCKS FOR INDICATOR LIGHT BOOTH CABLE
10	TERMINAL BLOCKS FOR INDICATOR LIGHT PANEL CABLE

TOP VIEW



FRONT VIEW



NOTES:

1. ALL EQUIPMENT SHALL BE SECURED. NO EQUIPMENT WILL BE LAYING IN BOTTOM OF CABINET. INSTALLATION SHALL BE NEAT, DRESSED AND ACCORDING TO THE PLANS.
2. CONTRACTOR SHALL SUBMIT MATERIAL SUBMITTALS FOR ALL CABINET COMPONENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
3. INDICATOR LIGHT CABLES TO BE WIRED ACCORDING TO THE INDICATOR LIGHT WIRING DIAGRAMS AS SHOWN ON SHEETS E-13 TO E-14.
4. INDICATOR LIGHT DRAWER LAYOUT SHOWN FOR TYPICAL CMS CABINET.
5. ROUTE ALL CABLES THROUGH DRILLED HOLES AT BOTTOM OF DRAWER. INCLUDE PLASTIC GROMMETS IN HOLE.
6. TERMINATE ALL CABLES ON NEW TERMINATION BLOCKS.
7. FASTEN ALL CABLES TO DRAWER TO PREVENT STRAINING ON TERMINATION BLOCKS.
8. EACH CABINET DRAWER SHALL BE DESIGNED TO ACCOMMODATE UP TO FOUR (4) INDICATOR CONTROL LANES.
9. CONTRACTOR TO LEAVE AT LEAST ONE RACK UNIT OF SPACE BETWEEN DRAWER AND BOTTOM OF CABINET.

INDICATOR LIGHT CABINET DRAWER LAYOUT (RICHMOND - SAN RAFAEL)

NO SCALE

E-17

SHEET	OF
17	17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580	6.13	90	123

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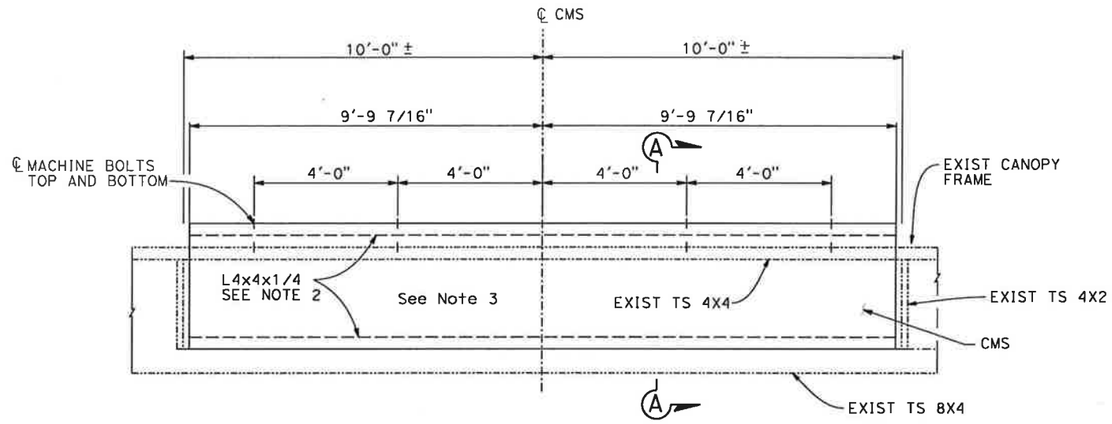
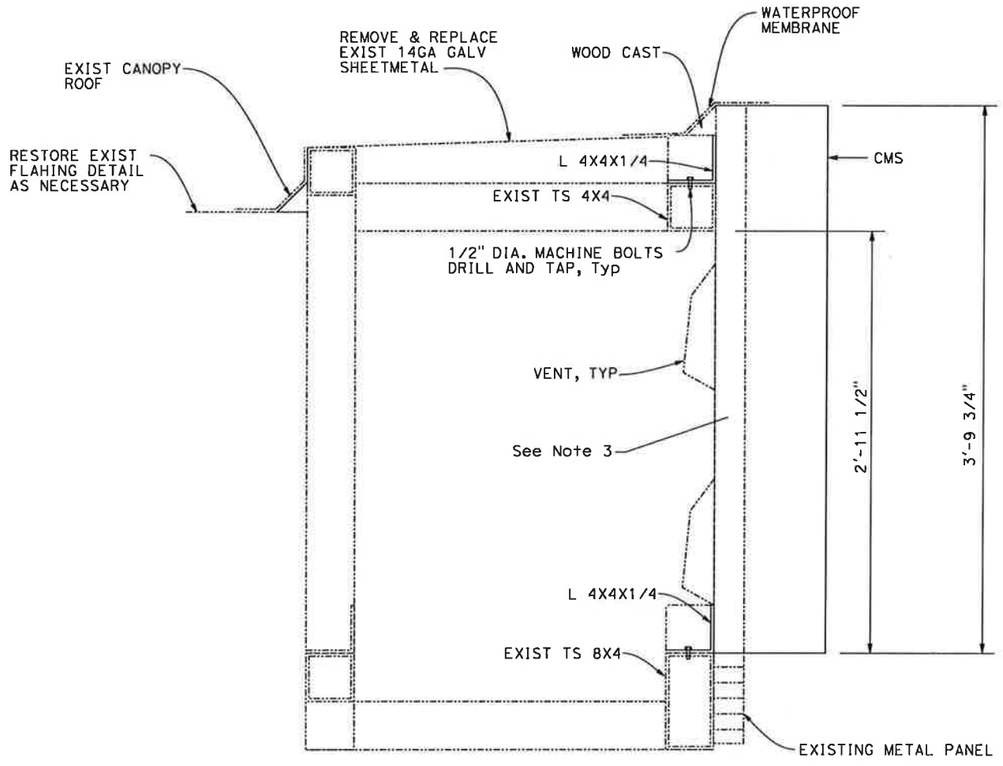


CMS SUPPORT ELEVATION

SCALE: 1/2" = 1'-0"



SECTION A-A

SCALE: 2" = 1'-0"

Notes:

1. For location and number of new CMS panels, see layout sheet L-11.
2. The angle sections are part of the CMS panel.
3. Remove existing CMS, curtains, sliding screen carrier, track and corner glide, etc., prior to installing new CMS.

Legend:

———— Indicates New Structure

- - - - - - - - Indicates Exist Structure

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	80	1.99	91	123

REGISTERED CIVIL ENGINEER 3/12/10 DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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101 EIGHTH STREET
OAKLAND, CALIFORNIA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831

DESIGN OVERSIGHT / SIGN OFF DATE		DESIGN	BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER
		DETAILS	BY E. Garnica	CHECKED		
		QUANTITIES	BY	CHECKED		

BRIDGE NO. | POST MILE 1.99

SFOBB TOLL PLAZA

CMS SUPPORT

SHEET **S-1**

DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 03/12/10

SHEET 1 OF 1

FILE => ...\Structural\Structual_CMS-1.dgn

USERNAME => Flor_Lo PLOTTED => 3/15/2010 TIME PLOTTED => 9:14:51 AM

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04	Ala	80	1.99/2.1	92	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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55 SOUTH MARKET STREET
SUITE 1500
SAN JOSE, CA 95113-2332

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE LATEST VERSION OF THE CALTRANS ELECTRICAL CODE AND STANDARD PLAN AND SPECIFICATIONS.
2. CALL UNDERGROUND SERVICE ALERT 48 HOURS BEFORE EXCAVATION U.S.A. (800) 277-2600.
3. ALL ELECTRICAL, CMS AND TOLL SYSTEM EQUIPMENT, INFRASTRUCTURE, LANDSCAPING OR BUILDINGS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. ALL ELECTRICAL AND ORT EQUIPMENT INCLUDING CONDUITS, JUNCTION AND SPLICE BOXES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER.
5. SERVICE EQUIPMENT, ZEC, AVI AND CMS CABINET ENCLOSURES, CONTROLLER ASSEMBLIES, CMS AND OTHER ELECTRICAL EQUIPMENT ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATION SHALL BE DETERMINED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
6. ALL EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHOWN ON THE PLANS IS FOR REFERENCE AND SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. LOCATIONS ARE APPROXIMATED. ANY DAMAGE TO THE EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO ADDITIONAL COST TO BATA.
7. NEW CIRCUIT BREAKERS TO BE INSTALLED TO EXISTING PANEL BOXES SHALL MATCH THE EXISTING TYPE OR APPROVED BY THE ENGINEER AS REQUIRED.
8. ALL DIMENSIONS INDICATED ARE TO BE VERIFIED IN FIELD PRIOR TO COMMENCING WORK.
9. THE CONTRACTOR SHALL IDENTITY AND VERIFY ALL EXISTING UTILITIES, POWER SOURCES AND POWER CONSUMPTIONS AS REQUIRED OR NEEDED AS SHOWN ON THE PLANS PRIOR TO COMMENCING WORK.
10. SEE STRUCTURAL PLANS FOR EXACT LOCATION OF ORT TOLLING STRUCTURES, FRAMES AND MOUNTING BRACKETS.
11. ALL ABOVE GROUND CONDUIT SHALL BE SUPPORTED AT A MINIMUM OF EVERY 5 FEET.
12. ALL ELECTRICAL ITEMS THAT USE ANCHORS TO ATTACH TO THE CONCRETE STRUCTURES SHALL USE STAINLESS STEEL POWER STUD ANCHORS-THREADED VERSION SIZED PER MANUFACTURER RECOMMENDATION AND EPOXY ANCHOR HOLES USING SEALANT WITH A RATED LIFE OF 25 YEARS OR GREATER.
13. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE NEC & NATIONAL ELECTRICAL SAFETY CODE AND THE CALIFORNIA ELECTRICAL CODE (CEC). ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER NEC REQUIREMENTS.
14. ALL COMPONENTS INCLUDING CONDUITS, JUNCTION BOXES, CABLING, EQUIPMENT, AND CABINETS SHALL BE CLEARLY LABELED WITH PROPER TAGS, NAME PLATES, AND I.D. LABELS. ALL WORK SHALL BE PER CALTRANS STANDARD AS APPROVED BY THE ENGINEER.
15. CONTRACTOR SHALL USE TYPE 1 CONDUIT IN TUNNEL AND TRENCH, TYPE 2 CONDUIT FOR EXPOSED CONDITIONS AND TYPE 4 FLEXIBLE CONDUIT AS SHOWN ON PLANS.
16. ALL EXTERIOR PULL BOXES AND JUNCTION BOXES SHALL BE NEMA 4X.
17. ALL ELECTRICAL AND EXTERIOR CONNECTIONS SHALL BE WEATHERPROOF.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ANY EXISTING CONDUIT AND/OR JUNCTION BOXES TO BE USED ON THIS CONTRACT PRIOR TO PULLING NEW CABLE THROUGH. ANY DAMAGE TO NEW OR EXISTING CABLE OR OTHER INFRASTRUCTURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.

LEGEND:

- CHANGEABLE MESSAGE SIGN
- EXISTING CONDUIT
- EXISTING CONDUIT WITH NEW CABLE
- NEW CONDUIT
- JUNCTION BOX
- EXISTING JUNCTION BOX
- CMS CABINET
- ORT CABINET
- CONDUIT IN
- CONDUIT OUT
- RISER CONDUIT

ABBREVIATIONS:

AVI	AUTOMATED VEHICLE IDENTIFICATION
CEC	CALIFORNIA ELECTRICAL CODE
CMS	CHANGEABLE MESSAGE SIGN
COMM	COMMUNICATIONS
E	EXISTING
JB	JUNCTION BOX
KVA	KILO-VOLT AMPERE
MPE	MAIN PLAZA ELECTRIC (BACK-UP)
N	NEW
NEC	NATIONAL ELECTRICAL CODE
ORT	OPEN ROAD TOLLING
PB	CEILING/WALL MOUNTED PULL BOX
PCC	PLASTIC COATED CONDUIT
PNL	PANEL
TYPE D CABLE	12 SINGLE MODE FIBER OPTIC CABLE
TYPE 1 CONDUIT	GALVANIZED RIGID STEEL (GRS)
TYPE 4 CONDUIT	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
XFMR	TRANSFORMER
ZEC	ZONE EQUIPMENT CABINET

INDEX:

GENERAL NOTES, LEGEND, ABBREVIATION AND INDEX OF DRAWINGS

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY

E-1

SHEET	OF
1	10

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REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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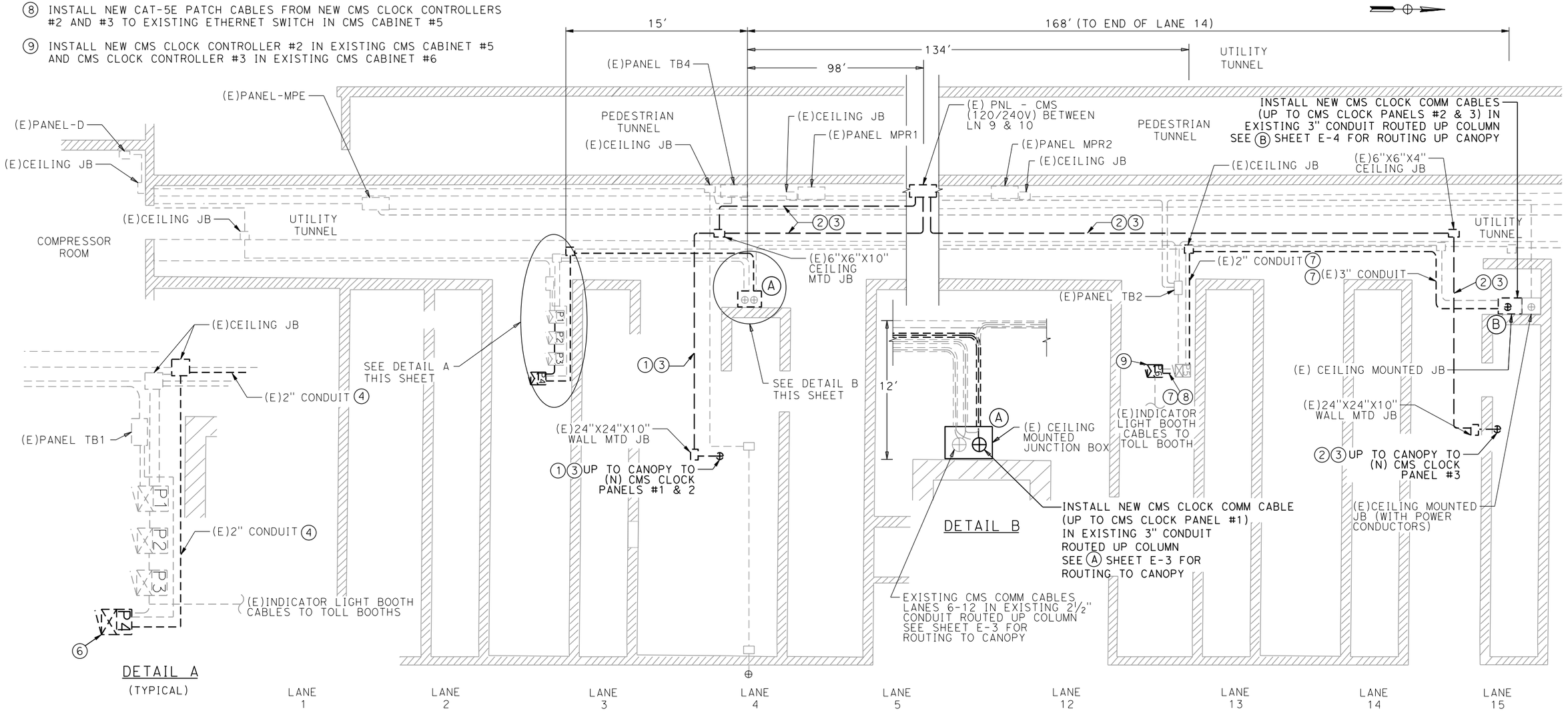
SHEET NOTES:

1. REMOVE AND REPLACE (E) 6 #8 WITH 4 #10 & 2 #12G (120V, CLOCKS)
2. REMOVE AND REPLACE (E) 3 #8 WITH 2 #10 & 1 #12G (120V, CLOCK)
3. (E) 1" CONDUIT
4. INSTALL NEW CMS COMM CABLES FOR NEW CMS CLOCK PANEL #1
5. INSTALL NEW CAT-5E PATCH CABLE FROM NEW CMS CLOCK CONTROLLER #1 TO EXISTING ETHERNET SWITCH IN CMS CABINET #1
6. INSTALL NEW CMS CLOCK CONTROLLER #1 IN EXISTING CMS CABINET #4
7. INSTALL NEW CMS COMM CABLES FOR NEW CMS CLOCK PANELS #2 AND #3
8. INSTALL NEW CAT-5E PATCH CABLES FROM NEW CMS CLOCK CONTROLLERS #2 AND #3 TO EXISTING ETHERNET SWITCH IN CMS CABINET #5
9. INSTALL NEW CMS CLOCK CONTROLLER #2 IN EXISTING CMS CABINET #5 AND CMS CLOCK CONTROLLER #3 IN EXISTING CMS CABINET #6



TUNNEL LEVEL - PARTIAL FLOOR PLAN VIEW

LEGEND

P1 = CMS CABINET 1
P2 = CMS CABINET 2
P3 = CMS CABINET 3
P4 = CMS CABINET 4
P5 = CMS CABINET 5
P6 = CMS CABINET 6

NOTES:

1. CONTRACTOR TO ADD CEILING MOUNTED JUNCTION (PULL) BOXES AS REQUIRED OR NEEDED.
2. SEE SHEET E-10 FOR PNL CMS PANELBOARD SCHEDULE.

TUNNEL LEVEL CONDUIT ROUTING

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

E-2

SHEET	OF
2	10

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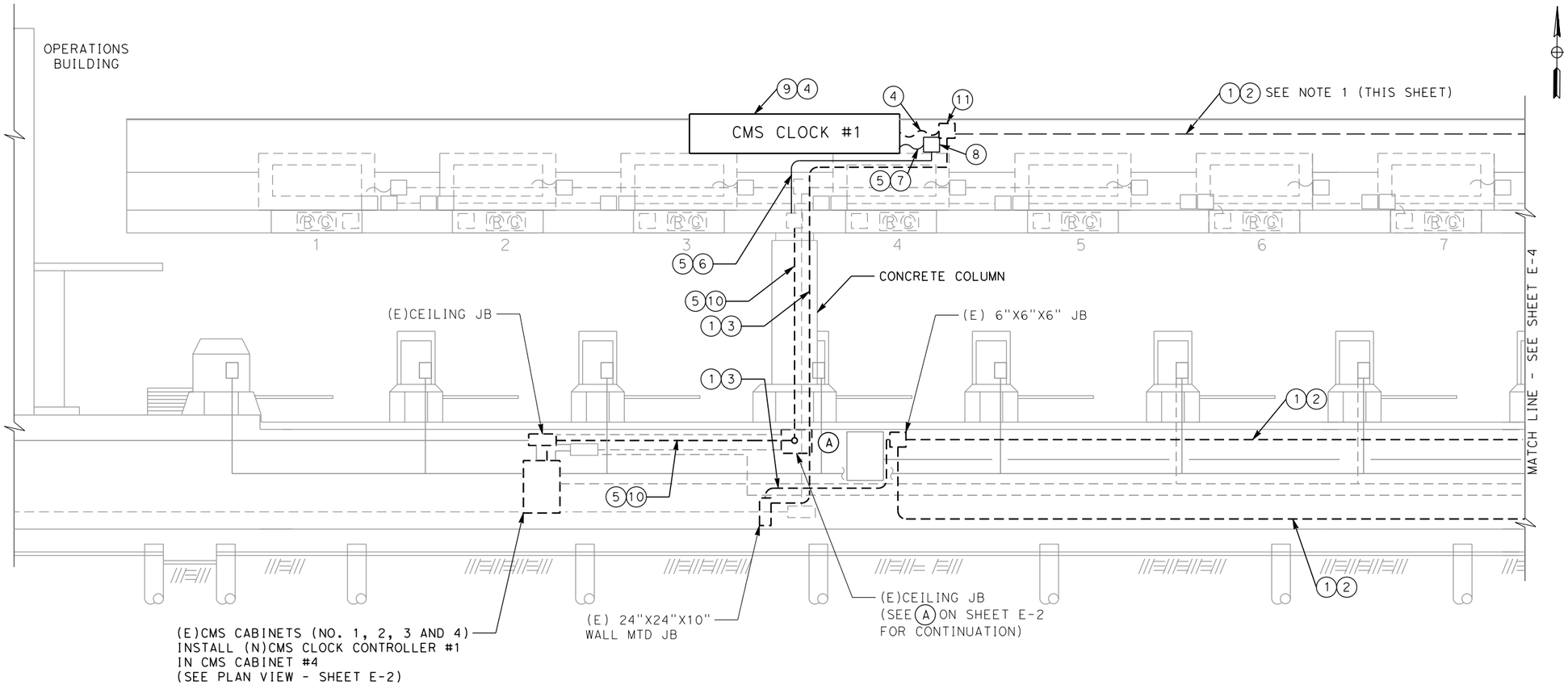
55 SOUTH MARKET STREET
SUITE 1500
SAN JOSE, CA 95113-2332

SHEET NOTES:

1. (E) 1" CONDUIT
2. REMOVE AND REPLACE (E) 3 #8 WITH 2 #10 & 1 #12G (120V, CLOCK)
3. REMOVE AND REPLACE (E) 6 #8 WITH 4 #10 & 2 #12G (120V, CLOCK)
4. CONNECT (N) 2 #10 & 1 #12G (120 V) IN (E) 1" TYPE 4 CONDUIT TO NEW CMS CLOCK PANEL #1
5. INSTALL CMS CLOCK COMM CABLE(S)
6. INSTALL (N) 2" TYPE 1 CONDUIT
7. INSTALL (N) 1" TYPE 4 CONDUIT WITH CABLES
8. INSTALL (N) TYPE 1 JB
9. INSTALL (N) CMS PANEL
10. (E) 3" CONDUIT
11. (E) 20"X20"X8" TYPE 1 JB



ELEVATION VIEW

NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDUIT AND JUNCTION BOXES FOR USE ON THIS PROJECT. CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONDUIT AND JUNCTION BOXES AS NEEDED OR REQUIRED.
2. ALL INSTALLED CMS PANELS ARE TO BE CONNECTED TO THE BUILDING GROUND SYSTEM.

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY

TUNNEL TO CANOPY CONDUIT ROUTING (SHEET 1 OF 2)

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

NO SCALE

E-3

SHEET	OF
3	10

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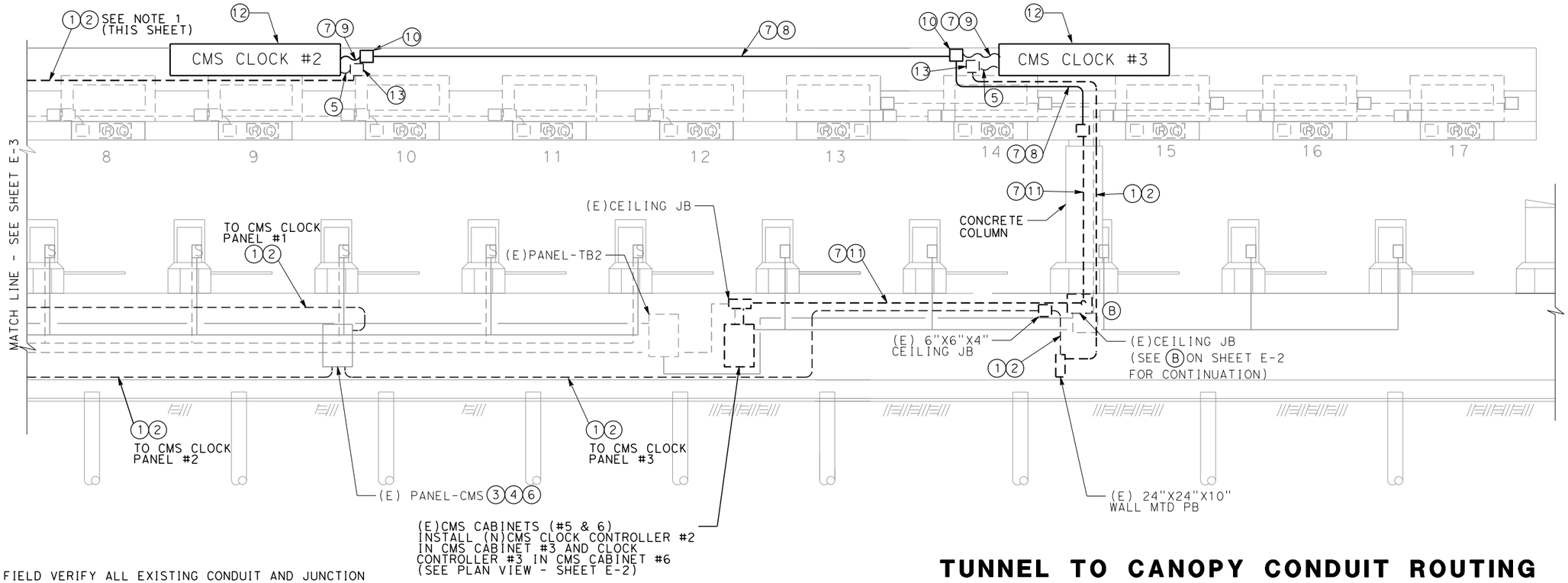
SHEET NOTES:

1. (E) 1" CONDUIT
2. REMOVE AND REPLACE (E) 3 #8 WITH 2 #10 & 1 #12G (120V, CLOCK)
3. DISCONNECT (E)BRANCH CIRCUITS 4/6, 8/10 AND 5/7 (CMS 6, 7 & 8) AND LABEL CIRCUIT BREAKERS (40A-2P) AS SPARE
4. CONNECT (N) CMS CLOCK PANELS 1, 2 & 3 TO (E) 20A-1P CIRCUIT BREAKERS 9, 11 & 12 SEE PANEL SCHEDULE FOR MORE INFORMATION
5. CONNECT NEW 2 #10 & 1 #12 (120V) IN (E) 1" TYPE 4 CONDUIT TO NEW CLOCK PANEL
6. PROVIDE NEW REVISED (TYPE WRITTEN) PANEL SCHEDULE
7. INSTALL CMS CLOCK COMM CABLE(S) IN (E) CONDUIT
8. INSTALL (N) 2" TYPE 1 CONDUIT
9. INSTALL (N) 1" TYPE 4 CONDUIT WITH CABLES
10. INSTALL (N) TYPE 1 JB
11. (E) 3" CONDUIT
12. INSTALL (N) CMS PANEL
13. (E) 20"X20"X8" TYPE 1 JB



ELEVATION VIEW

NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDUIT AND JUNCTION BOXES FOR USE ON THIS PROJECT. CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONDUIT AND JUNCTION BOXES AS NEEDED OR REQUIRED.
2. ALL INSTALLED CMS PANELS ARE TO BE CONNECTED TO THE BUILDING GROUND SYSTEM.

TUNNEL TO CANOPY CONDUIT ROUTING (SHEET 2 OF 2)

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

NO SCALE

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E-4

SHEET	OF
4	10

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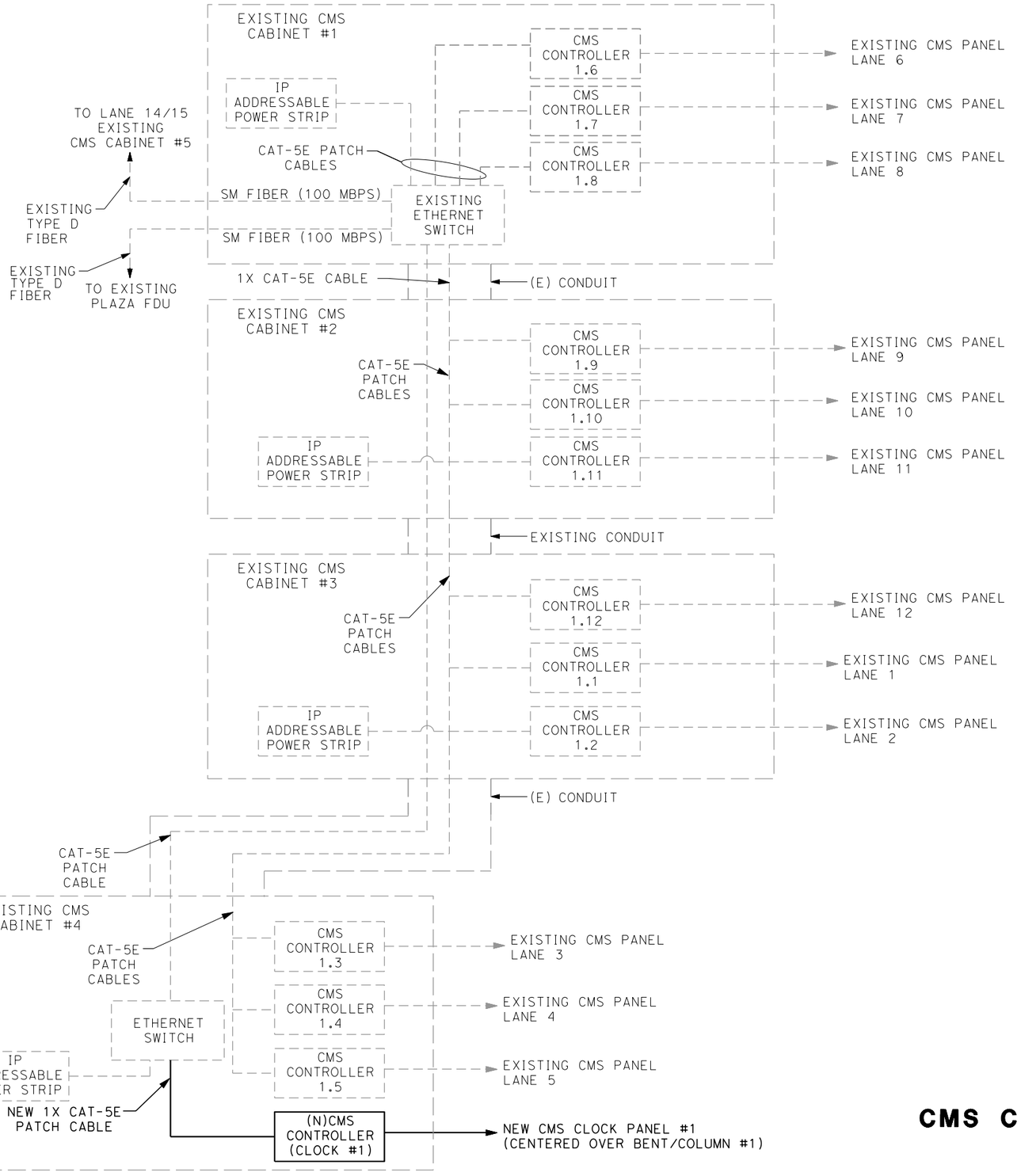

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NOTES:

1. INSTALL CMS CLOCK PANEL CONTROLLER #1 IN EXISTING CMS CABINET #4.
2. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS.
3. CONTRACTOR TO INSTALL, CONNECT AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS.
4. SEE SHEET E-2 FOR CMS CABINET LOCATIONS.
5. ALL CMS CONTROLLERS TO BE NUMBERED WITH 1.X THROUGH 1.XX (WHERE X=LANE #)

CMS CLOCK (PANEL #1) SYSTEM SCHEMATIC

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

NO SCALE

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E-5

SHEET	OF
5	10

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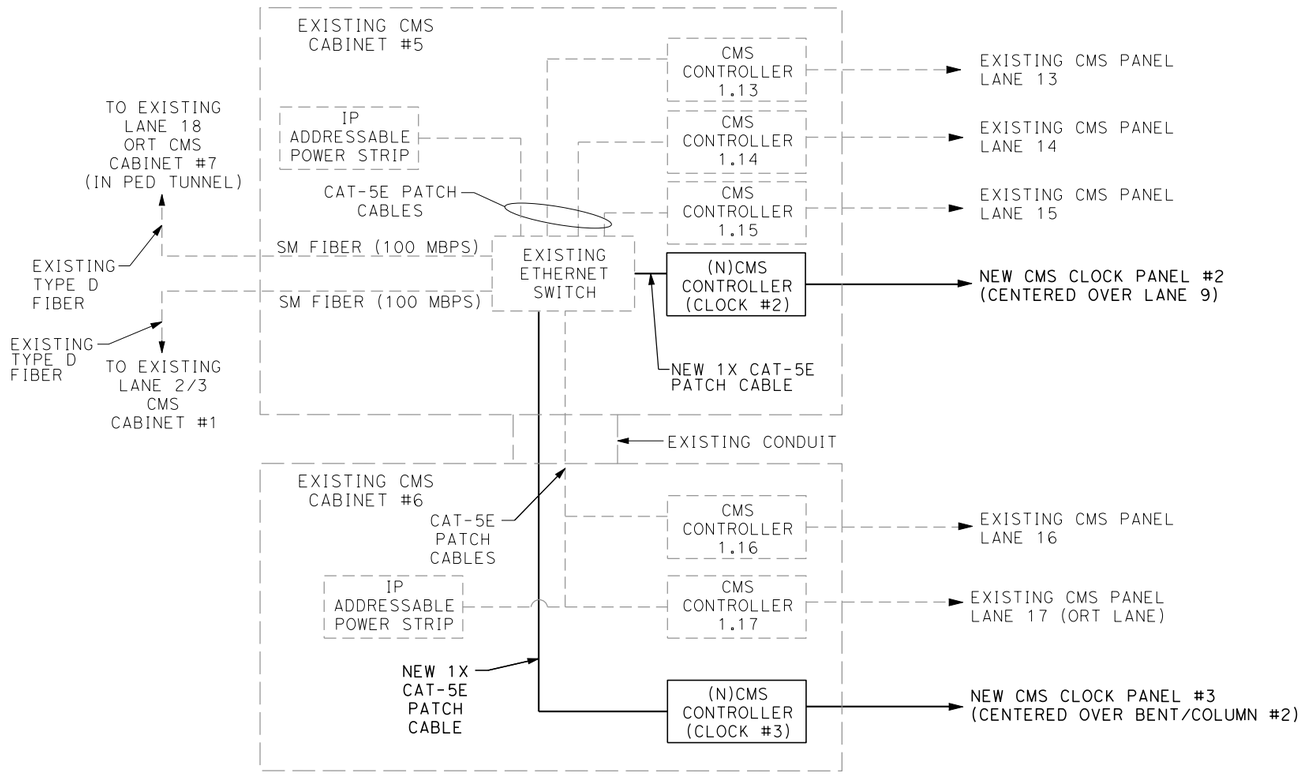

NOTES:

1. INSTALL CMS CLOCK PANEL CONTROLLERS 2 & 3 IN EXISTING CMS CABINET #6.
2. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS.
3. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS.
4. SEE SHEET E-2 FOR CMS CABINET LOCATIONS.
5. ALL CMS CONTROLLERS TO BE NUMBERED WITH 1.X THROUGH 1.XX (WHERE X = LANE #)

CMS CLOCK (PANELS 2 AND 3) SYSTEM SCHEMATIC

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

E-6

NO SCALE

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SHEET	OF
6	10

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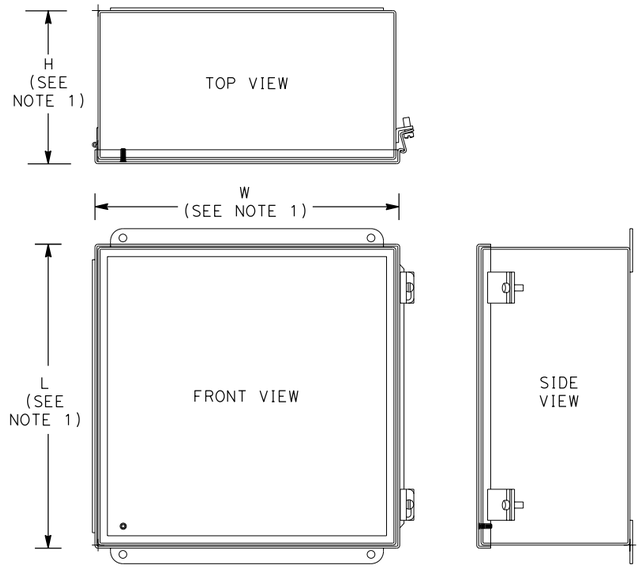
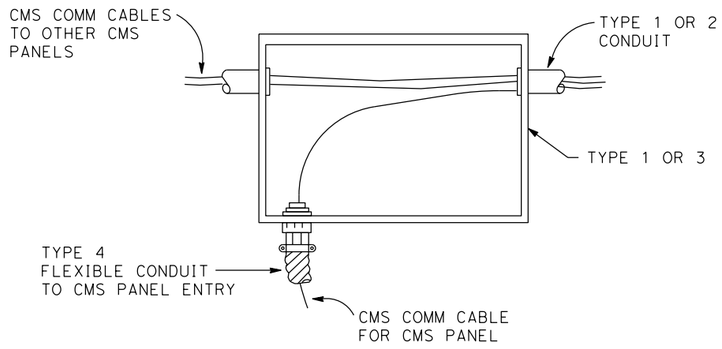
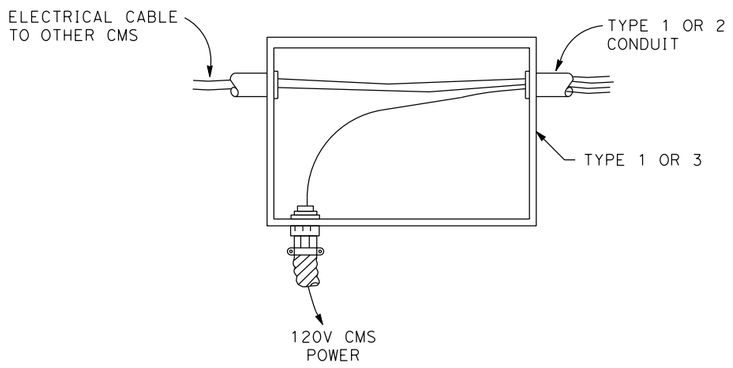


NEMA 4X JUNCTION BOX
(SHOWN WITH HINGE)





NOTES:

1. TYPE 1 NEMA 4X JUNCTION BOX (12"L X 12"W X 6"D, TYP.) OR AS REQ'D.
   TYPE 3 NEMA 4X JUNCTION BOX (5"L X 6"W X 4"D, TYP.) OR AS REQ'D.

2. MINIMUM SIZES OF JUNCTION BOXES SHOWN. CONTRACTOR SHALL CONFIRM SIZES AND QUANTITES IN FIELD AND SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.

3. FOR JUNCTION BOX MOUNTED ON EXISTING CONCRETE WALLS OR SURFACE FLOR MOUNTED USE ⅜" EXPANSION ANCHORS, TOTAL OF 4 FOR EACH BOX.

JUNCTION BOX DETAILS (TYPICAL)

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

NO SCALE

E-7

SHEET	OF
7	10

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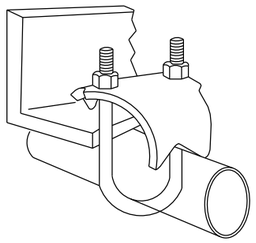
PLANS APPROVAL DATE

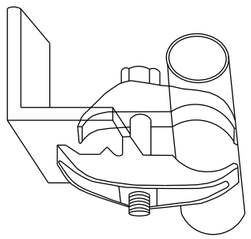
RAMSEY J. HISSEN
No. C-39608
Exp. 12/31/10
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

BAY AREA TOLL AUTHORITY
101 EIGHTH STREET
OAKLAND, CA 94607

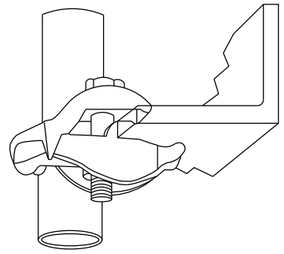
URS CORPORATION
55 SOUTH MARKET STREET
SUITE 1500
SAN JOSE, CA 95113-2332



FOR MOUNTING PIPES OR CONDUIT AT RIGHT ANGLES TO THE BEAM DETAIL



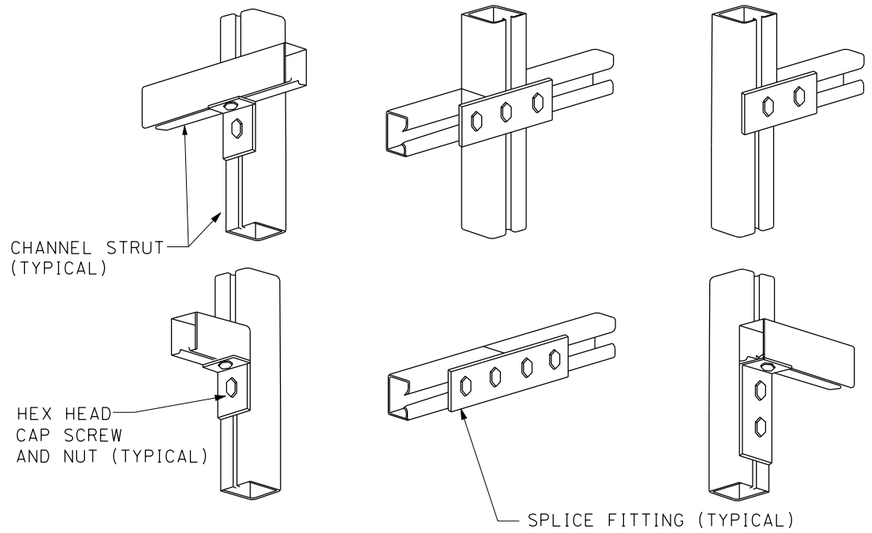
FOR MOUNTING PIPES OR CONDUIT PARALLEL TO THE BEAM DETAIL



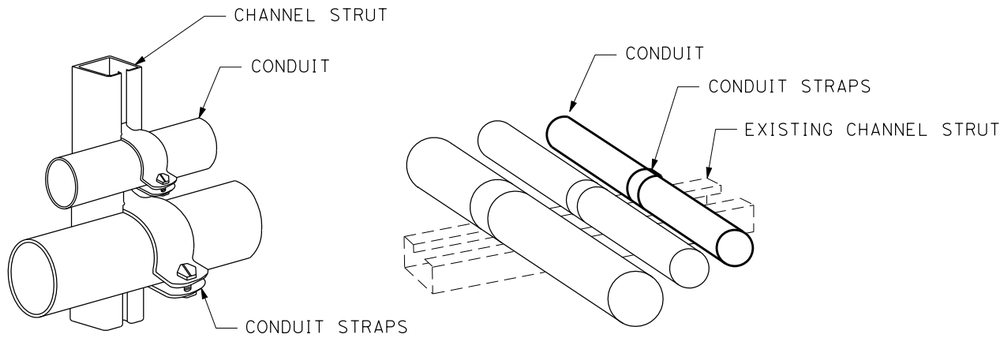
FOR MOUNTING PIPES OR CONDUIT VERTICALLY ACROSS BEAM EDGE DETAIL

NOTES:

1. ALL EQUIPMENT SUPPORT FITTINGS AND FASTENERS SHALL BE HOT DIPPED GALVANIZED. IF IN OUTDOOR OR EXPOSED LOCATIONS THEN PROVIDE STAINLESS STEEL OR PCC. ALL BOLTS AND SCREWS SHALL BE STAINLESS STEEL.



TYPICAL EQUIPMENT SUPPORT CHANNEL, FITTINGS AND FASTERERS



MOUNTING ON STRUT DETAILS

CONDUIT MOUNTING AND ATTACHMENT DETAILS

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

NO SCALE

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY

E-8

SHEET	OF
8	10

LAST REVISION: 00-00-00

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY:
CHECKED BY:

CONSULTANT FUNCTIONAL SUPERVISOR: LARRY JONES

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CU 00000

EA TBD (BATA-0006)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	80	1.99/2.1	100	123

Carol Light
REGISTERED CIVIL ENGINEER

3/12/10
DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
CAROL LIGHT
No. 10145
Exp 09/30/11
ELECTRICAL
STATE OF CALIFORNIA

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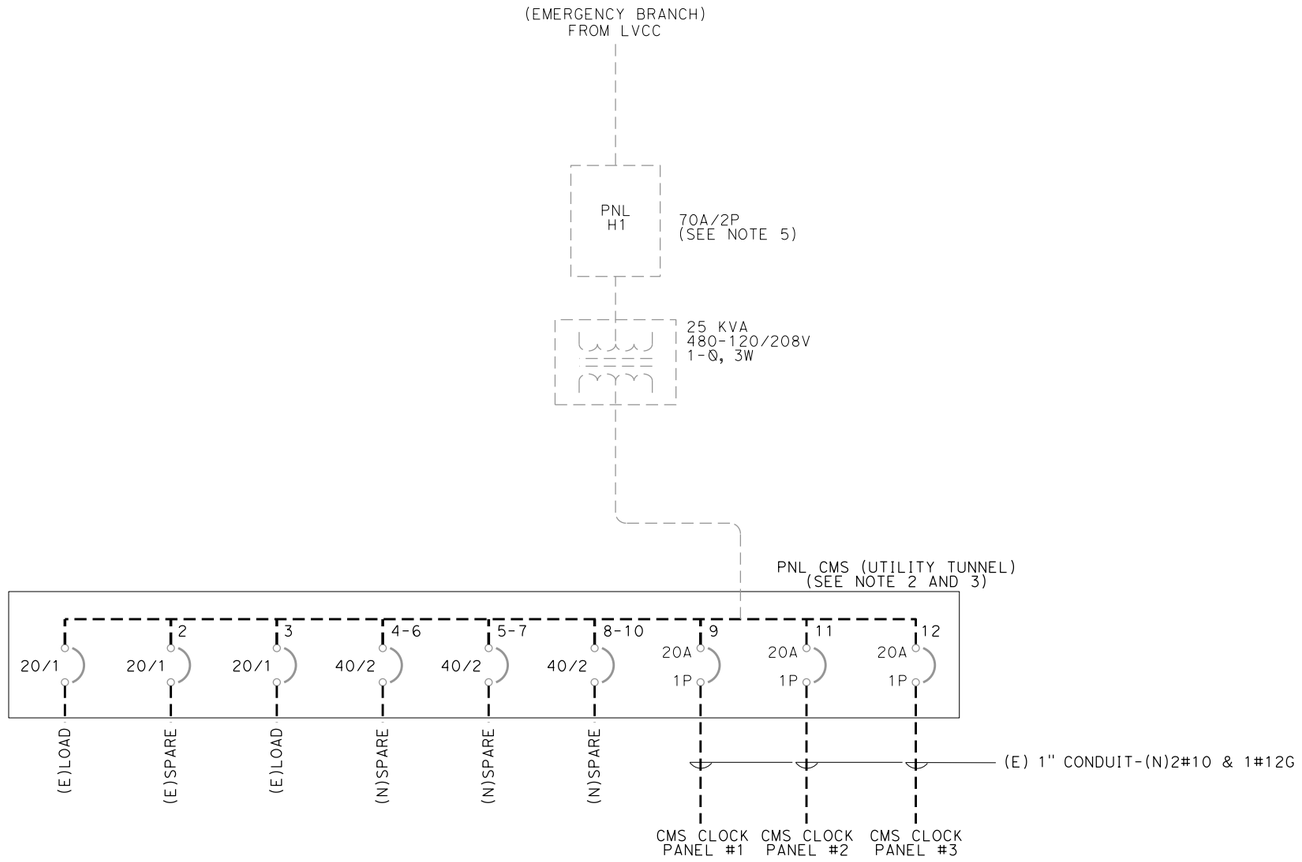

NOTES:

1. ONE (E) 20A CIRCUIT BREAKER FOR EACH CMS CLOCK PANEL.
2. SEE CMS PANEL SCHEDULE (SHEET E-10) FOR MORE INFORMATION.
3. PROVIDE NEW REVISED (TYPE-WRITTEN) PANEL SCHEDULE.
4. SEE SHEET E-2 FOR ELECTRICAL PANEL LOCATION.
5. CONTRACTOR TO FIELD VERIFY AND PROVIDE GROUNDING TO BUILDING GROUNDING SYSTEM PER CODE FROM PNL H1 TO PNL CMS AS REQUIRED OR NEEDED.
6. ALL METAL PARTS OF THE ELECTRICAL SYSTEM SHALL BE BONDED TOGETHER PER CONTRACT SPECIFICATIONS.
7. THE CMS PANELS SHALL BE CONNECTED TO THE BUILDING GROUNDING SYSTEM BY THE EQUIPMENT/PANEL GROUND CONDUCTOR IN EACH CONDUIT.

PARTIAL ONE LINE DIAGRAM

(SAN FRANCISCO-OAKLAND BAY BRIDGE) E-9

NO SCALE

SHEET	OF
9	10

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04	Ala	80	1.99/2.1	101	123

Carol Light — REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — CAROL LIGHT — No. 10145 — Exp 09/30/11 ELECTRICAL — STATE OF CALIFORNIA

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(E) PNL- CMS

PROJECT: SFOBB

LOCATION: UTILITY TUNNEL

(FED FROM PANEL- H1 VIA 25KVA XMFR)

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(E) LOAD				20	1	1	A	2	20	1				(E) SPARE
(E) LOAD				20	1	3	B	4	40					(N) SPARE
(N) SPARE				40		5	A	6		2				
					2	7	B	8	40					(N) SPARE
(N) CMS CLOCK PANEL # 1			1.00	20	1	9	A	10		2				
(N) CMS CLOCK PANEL # 2			1.00	20	1	11	B	12	20	1			1.00	(N) CMS CLOCK PANEL #3
TOTALS SECTION 1	**0.00**	**0.00**	**2.00**								**0.00**	**0.00**	**1.00**	

VOLTAGE: 120/240V

PHASE/WIRE: 1 PHASE, 3 WIRE

LOAD SUMMARY

RATING:	CONNECT LOAD	DEMAND FACTOR	DEMAND LOAD
MAINS:	0.00	125% OF LOAD	0.00
225A-2P	0.00	NEC 220-13	0.00
MOUNTING:	3.00	1.00	3.00
SURFACE			
A.I.C.:	3.00 KVA		3.00 KVA
	12.5 AMPS		12.5 AMPS
BUS SIZE:			

BALANCE:	(KVA)	%	AMPS:
PHASE A:	1.00	33.33	4.81
PHASE B:	2.00	66.67	9.62

ADDITIONAL FEATURES:

S&L JOB #: 29018

NOTES:

1. CONTRACTOR TO UPDATE BREAKER PANEL BOARD SCHEDULE AND PROVIDE A NEW REVISED TYPE-WRITTEN PANEL BOARD SCHEDULE.
2. SEAL ALL OPEN BREAKER SPACES AS DIRECTED BY ENGINEER.

PNL CMS PANELBOARD SCHEDULE

(SAN FRANCISCO-OAKLAND BAY BRIDGE)

NO SCALE

E-10

SHEET	OF
10	10

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	92	R2.59	102	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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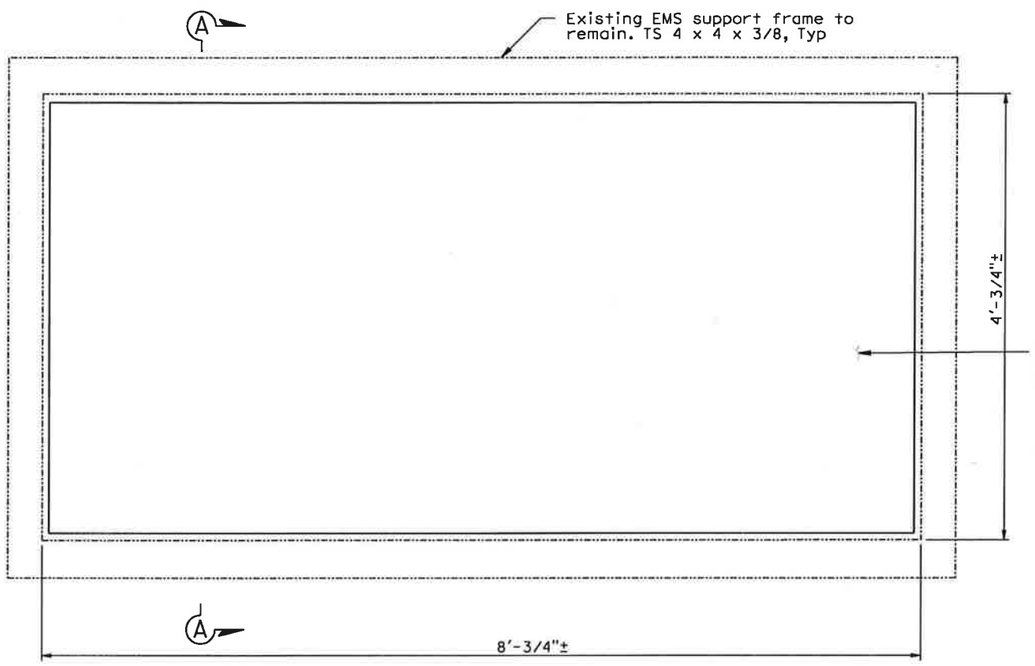
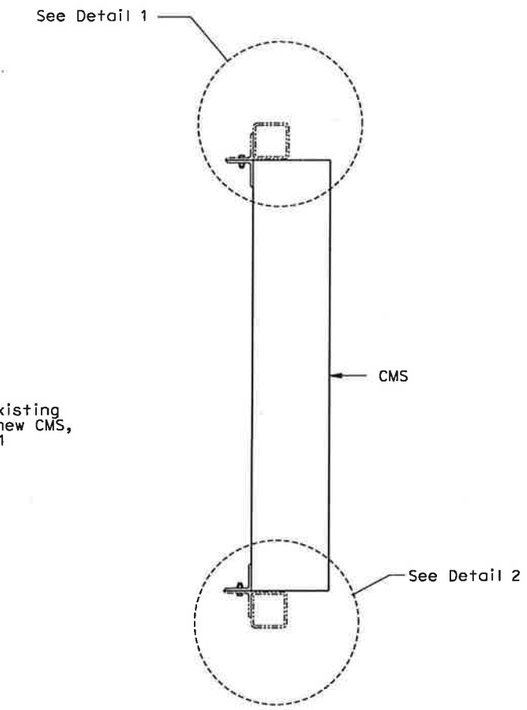
OAKLAND, CALIFORNIA 94607

MGE ENGINEERING, INC.
7415 GREENHAVEN DRIVE, SUITE 100
SACRAMENTO, CALIFORNIA 95831



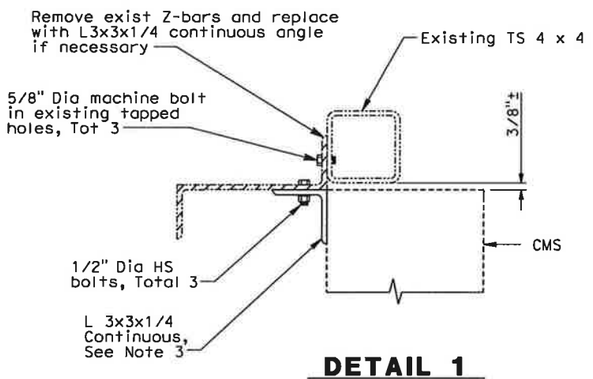
CMS SUPPORT ELEVATION

SCALE: 1 1/2" = 1'-0"



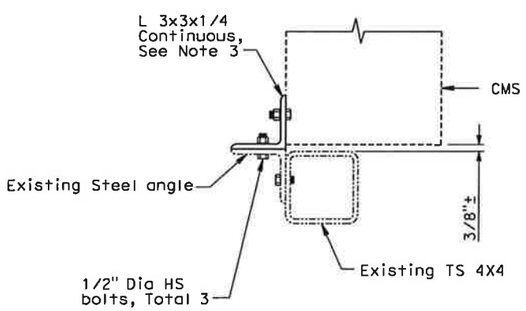
SECTION A-A

SCALE: 1 1/2" = 1'-0"



DETAIL 1

SCALE: 3" = 1'-0"



DETAIL 2

SCALE: 3" = 1'-0"

Notes:

1. For location and number of CMS panels, see sheet L-13.
2. CMS manufacturer shall verify dimensions of existing EMS connection details.
3. This angle to be prefabricated as part of CMS by CMS manufacturer.
4. All bolts, washers and lock nuts shall be of stainless steel or galvanized.
5. Install CMS in Toll Canopy Booths 6 & 7 (2).

Legend:

——— Indicates New Structure

- - - - - Indicates Exist Structure

▨ Indicates removal of portion of Exist frame

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT		DESIGN	BY G. Xu	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Guoping Xu PROJECT ENGINEER	BRIDGE NO.
SIGN OFF DATE		DETAILS	BY E. Garnico	CHECKED			POST MILE R2.59
		QUANTITIES	BY	CHECKED			

SAN MATEO-HAYWARD MAIN TOLL PLAZA
TYPICAL CANOPY CMS INSTALLATION

SHEET S-1

DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU EA

FILE => ...\Structural\sd-1.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 03/12/10

SHEET 1 OF 2

USERNAME => Florin_Lo PLOTTED => 3/12/2010 TIME PLOTTED => 10:03:00 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	92	R2.59	103	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

REGISTERED PROFESSIONAL ENGINEER — GUOPING XU — No. C 63977 — Exp. 09/30/10 — CIVIL — STATE OF CALIFORNIA

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7415 GREENHAVEN DRIVE, SUITE 100
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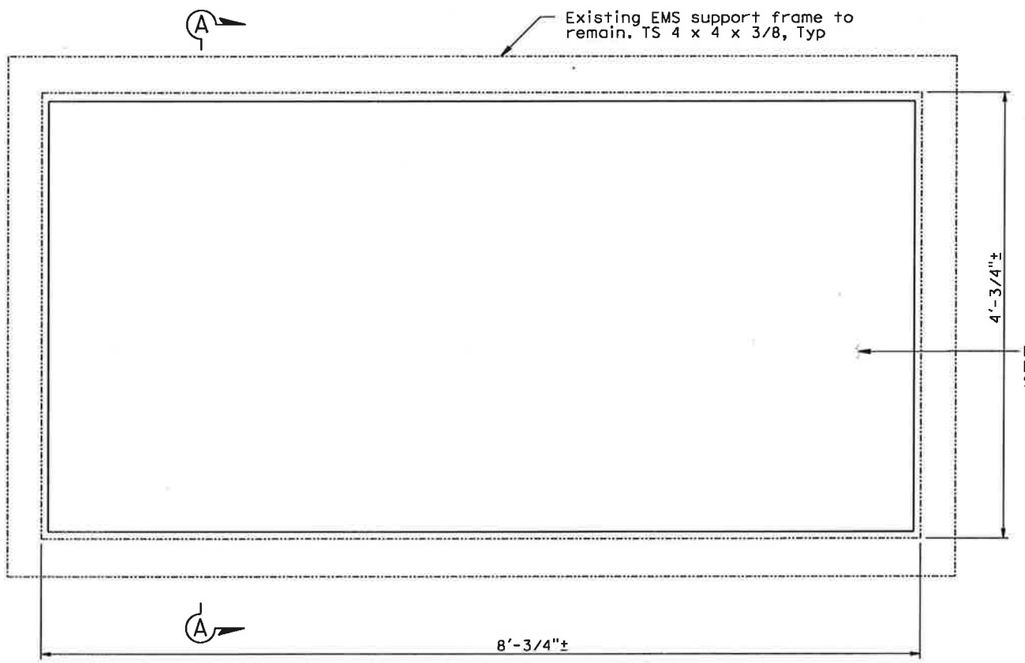
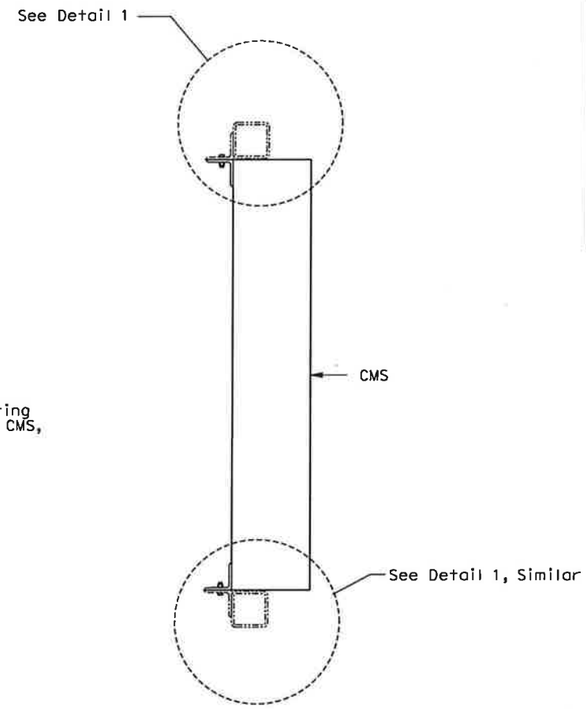


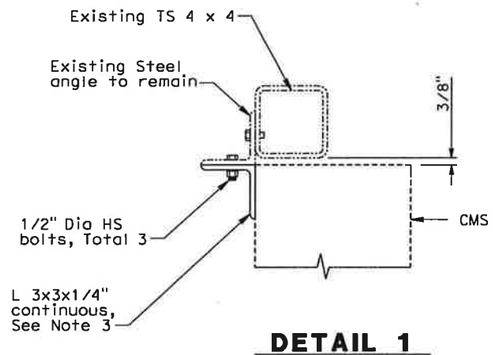
CMS SUPPORT ELEVATION

SCALE: 1 1/2" = 1'-0"



SECTION A-A

SCALE: 1 1/2" = 1'-0"



DETAIL 1

SCALE: 3" = 1'-0"

Notes:

1. For location and number of CMS panels, see sheet L-13.
2. CMS manufacturer shall verify dimensions of existing EMS and connection details.
3. This angle to be prefabricated by CMS Manufacturer and bolted CMS Casing.
4. Install CMS in Toll Canopy Booths 8-10 (3).

Legend:

——— Indicates New Structure

- - - - - Indicates Exist Structure

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN BY G. Xu CHECKED
DETAILS BY E. Garnica CHECKED
QUANTITIES BY CHECKED

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Guoping Xu
PROJECT ENGINEER

CU
EA

BRIDGE NO.
POST MILE R2.59

SAN MATEO-HAYWARD MINI TOLL PLAZA
TYPICAL CANOPY CMS INSTALLATION

SHEET S-2

DESIGN DETAIL SHEET (ENGLISH) (REV. 2/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) 03/12/10

SHEET 2 OF 2

FILE => ...\Structural\sd-2.dgn

USERNAME => Florin_Lo DATE PLOTTED => 3/12/2010 TIME PLOTTED => 10:03:40 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	92	R2.59	104	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE LATEST VERSION OF THE CALTRANS STANDARD PLAN AND SPECIFICATIONS.
2. CALL UNDERGROUND SERVICE ALERT 48 HOURS BEFORE EXCAVATION U.S.A. (800) 277-2600.
3. ALL ELECTRICAL AND CMS EQUIPMENT, INFRASTRUCTURE, LANDSCAPING OR BUILDINGS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. ALL ELECTRICAL AND CMS EQUIPMENT INCLUDING CONDUITS, JUNCTION AND SPLICE EQUIPMENT RACK ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER.
5. SERVICE EQUIPMENT, AND CMS CABINET ENCLOSURES, CONTROLLER ASSEMBLIES, CMS AND OTHER ELECTRICAL EQUIPMENT ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. EXACT LOCATION SHALL BE DETERMINED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
6. ALL EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHOWN ON THE PLANS IS FOR REFERENCE AND SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. LOCATIONS ARE APPROXIMATED. ANY DAMAGE TO THE EXISTING ELECTRICAL AND COMMUNICATION EQUIPMENT SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.
7. NEW CIRCUIT BREAKERS TO BE INSTALLED TO EXISTING PANEL BOXES SHALL MATCH THE EXISTING TYPE OR APPROVED BY THE ENGINEER AS REQUIRED.
8. ALL DIMENSIONS INDICATED ARE TO BE VERIFIED IN FIELD PRIOR TO COMMENCING WORK.
9. THE CONTRACTOR SHALL IDENTITY AND VERIFY ALL EXISTING UTILITIES, POWER SOURCES AND POWER CONSUMPTIONS AS REQUIRED OR NEEDED AS SHOWN ON THE PLANS PRIOR TO COMMENCING WORK.
10. SEE STRUCTURAL PLANS FOR EXACT LOCATION OF CMS STRUCTURES, FRAMES AND MOUNTING BRACKETS.
11. ALL ABOVE GROUND CONDUIT SHALL BE SUPPORTED AT A MINIMUM OF EVERY 5 FEET.
12. ALL ELECTRICAL ITEMS THAT USE ANCHORS TO ATTACH TO THE CONCRETE STRUCTURES SHALL USE STAINLESS STEEL POWER STUD ANCHORS-THREADED VERSION SIZED PER MANUFACTURER RECOMMENDATION AND EPOXY ANCHOR HOLES USING SEALANT WITH A RATED LIFE OF 25 YEARS OR GREATER.
13. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE CEC, NEC & NATIONAL ELECTRICAL SAFETY CODE. ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER NEC REQUIREMENTS. ALL COMPONENTS INCLUDING CONDUITS JUNCTION BOXES, CABLING, EQUIPMENT, AND CABINETS SHALL BE CLEARLY LABELED WITH PROPER TAGS, NAME PLATES, AND I.D. LABELS.
14. CONTRACTOR SHALL USE TYPE 1 CONDUIT IN TUNNEL AND TRENCH, TYPE 2 CONDUIT FOR EXPOSED CONDITIONS AND TYPE 4 FLEXIBLE CONDUIT AS SHOWN ON PLANS.
15. ALL EXTERIOR PULL BOXES AND JUNCTION BOXES SHALL BE NEMA 4X.
16. ALL ELECTRICAL AND EXTERIOR CONNECTIONS SHALL BE WEATHERPROOF.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ANY EXISTING CONDUIT AND/OR JUNCTION BOXES TO BE USED ON THIS CONTRACT PRIOR TO PULLING NEW CABLE THROUGH. ANY DAMAGE TO NEW OR EXISTING CABLE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO BATA.

LEGEND:

- CHANGEABLE MESSAGE SIGN
- EXISTING CONDUIT
- EXISTING CONDUIT WITH NEW CABLE
- NEW CONDUIT
- JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW CMS MINI TOLL PLAZA FIELD CABINET
- NEW CMS PLAZA CABINET
- EXISTING CMS PLAZA CABINET
- CONDUIT IN
- CONDUIT OUT
- X-Y LANE X TO LANE Y CABLES
- TERMINAL BLOCK
- — fo —— —— — EXISTING FIBER OPTIC CABLE
- EXISTING TRAFFIC SIGNAL INDICATOR
- QUAD RECEPTICAL
- DUPLEX RECEPTICAL
- S NEW INDICATOR LIGHT SWITCH CONSOLE PANEL
- RISER CONDUITS
- DROP CONDUITS
- NEW LED INDICATOR BOX
- IS EXISTING INDICATOR LIGHT SWITCH

ABBREVIATIONS:

AM	AMBER
BK	BLACK
BL	BLUE
BN	BROWN
C	CONDUIT
CAB	CABINET
CEC	CALIFORNIA ELECTRICAL CODE
CMS	CHANGEABLE MESSAGE SIGN
COMM	COMMUNICATIONS
CPB	COMMUNICATIONS PULL BOX
CKT	CIRCUIT
E	EXISTING
ETC	ELECTRONIC TOLL COLLECTION
FDU	FIBER DISTRIBUTION UNIT
FO	FIBER OPTIC
GFI	GROUND FAULT INTERRUPT
GN	GREEN
ILB	INDICATOR LIGHT BOOTH
ILC	INDICATOR LIGHT CANOPY
ILP	INDICATOR LIGHT PANEL
J-BOX	JUNCTION BOX
JB	JUNCTION BOX
KVA	KILO-VOLT AMPERE
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT EMITTING DIODE
MLO	MAIN LUG ONLY
NEC	NATIONAL ELECTRICAL CODE
N	NEUTRAL (GROUNDED CONDUCTOR)
ORT	OPEN ROAD TOLLING
PB	CEILING/WALL MOUNTED PULL BOX
PCC	PORTLAND CEMENT CONCRETE
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
RMC	RIGID METAL CONDUIT
R#	RELAY (# = RELAY NUMBER)
RD	RED
SS	STAINLESS STEEL
TEES	TRANSPORTATION ELECTRICAL EQUIPMENT
SM	SINGLE MODE
TB	TERMINAL BLOCKS
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYPE A CABLE	36 SINGLE MODE FIBER OPTIC CABLE
TYPE D CABLE	12 SINGLE MODE FIBER OPTIC CABLE
TYPE 1 CONDUIT	GALVANIZED RIGID STEEL (GRS)
TYPE 2 CONDUIT	TYPE 1 CONDUIT COATED WITH PVC OR POLYETHYLENE
TYPE 4 CONDUIT	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
UPS	UNINTERRUPTIBLE POWER SUPPLY
XFMR	TRANSFORMER
YL	YELLOW

INDEX:

STANDARD NOTES:

- BC INSTALL PULL BOX IN EXISTING CONDUIT RUN.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- SC SPLICE NEW TO EXISTING CONDUCTORS.
- AB ABANDONED
- RD REMOVE AND DISPOSE
- RS REMOVE AND SALVAGE

WIRING DIAGRAM LEGEND:

CB CIRCUIT BREAKER
NB NEUTRAL BUS
GB GROUND BUS
ENCLOSURE BOND
GROUNDING ELECTRODE
CIRCUIT BREAKER
R RECEPTACLE

GENERAL NOTES, LEGEND, ABBREVIATIONS AND INDEX OF DRAWINGS (SAN MATEO - HAYWARD BRIDGE)

E-1

SHEET	OF
1	20

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
$FREQUEST
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

PROJECT NOTES:

1. INSTALL NEW TYPE D CABLE IN EXISTING CONDUIT.
2. INSTALL NEW TYPE D CABLE.
3. INSTALL NEW TYPE 2 (1" C) CONDUIT WITH 2 #14 AND 1 #14G (120 V, CMS CABINET) AND PROVIDE CONDUIT SUPPORT.
4. USE SPARE 15A-1P CIRCUIT BREAKER (#14) TO FEED NEW CMS CONTROL CABINET.
5. INSTALL NEW ONE (1) 15A-IP CIRCUIT BREAKER FOR NEW CMS CABINET IN (E) SPACE 42.
6. INSTALL TYPE 1 (¾" C) CONDUIT WITH 2 14 AND 1 #14G (120 V, CMS CABINET) AND PROVIDE CONDUIT SUPPORT.
7. REMOVE AND REPLACE TWO (E) 20A-1P CIRCUIT BREAKERS #6 AND #7 WITH TWO (2) 15A-1P BREAKERS (120V, CMS SIGNS).
8. INSTALL TYPE 3 JUNCTION BOX BELOW CANOPY AS SPECIFIED IN CONTRACT DOCUMENTS.
9. INSTALL NEW CAT-5e CABLE.
10. ALL WALL, CEILING AND FLOOR PENETRATIONS SHALL BE CORE-DRILLED AS DIRECTED AND APPROVED BY CALTRANS SUFFICIENTLY LARGE TO ACCOMMODATE CONDUIT PLUS FLUSH MOUNTED END BELL. ALL CORE-DRILLS SHALL BE MADE WATER-TIGHT, SEALED AROUND CONDUIT PER CALTRANS REQUIREMENTS WITH FAST-SETTING EPOXY RESIN THROUGHOUT THE DEPTH OF HOLE.
11. INSTALL NEW INDICATOR LIGHT CANOPY CABLE.
12. INSTALL NEW INDICATOR LIGHT BOOTH CABLE.
13. INSTALL NEW INDICATOR LIGHT CONSOLE CABLE.
14. INSTALL NEW CMS COMM CABLE.
15. EXISTING TYPE 3 JUNCTION BOX BELOW CANOPY.
16. INSTALL NEW TYPE 2 EQUIPMENT RACK. SEE SHEET E-3 AND SPECIFICATIONS FOR SIZE AND TYPE.
17. INSTALL NEW TYPE 4 (1½" C) CONDUIT.
18. INSTALL NEW FIBER OPTIC DUPLEX JUMPER CABLES.
19. (E) FDU TO REMAIN.
20. REMOVE AND DISPOSE OF EXISTING INDICATOR LIGHT CABLE.
21. INSTALL NEW CMS PANEL AS SPECIFIED IN CONTRACT DOCUMENTS.
22. REPLACE EXISTING RED INDICATOR LIGHT WITH NEW RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.
23. ROUTE NEW CABLES THROUGH EXISTING CONDUIT.
24. MODIFY EXISTING GREEN INDICATOR LIGHT AND REPLACE WITH GREEN/FLASHING AMBER LED INDICATOR BULB. REPLACE EXISTING RED INDICATOR LIGHT WITH RED LED INDICATOR BULB. IF EXISTING RED INDICATOR LIGHT IS LED, FURNISH NEW RED LED INDICATOR BULB TO BATA AS A SPARE.
25. INSTALL NEW TYPE 2 (1½" C) CONDUIT.
26. INSTALL NEW GROUND MOUNT CMS MINI TOLL PLAZA FIELD CABINET FOR LANES 8-10 AS SPECIFIED IN CONTRACT DOCUMENTS.
27. ROUTE NEW CMS COMM CABLE THROUGH EXISTING JUNCTION BOX.
28. INSTALL NEW CMS PLAZA CABINET FOR LANES 6-7 AS SPECIFIED IN CONTRACT DOCUMENTS.
29. INSTALL INDICATOR LIGHT SWITCH CONSOLE PANEL.
30. REMOVE EXISTING INDICATOR LIGHT SWITCH IN TOLL BOOTH.
31. INSTALL NEW CMS CONTROLLERS. ROUTE CAT-5E PATCH CABLES FROM EACH CMS CONTROLLER TO NEW ETHERNET SWITCH IN EXISTING CMS CABINET.
32. INSTALL NEW TYPE 1 (2" C) CONDUIT.
33. INSTALL NEW TYPE 2 (2" C) CONDUIT.
34. INSTALL TYPE 1 JUNCTION BOX AS SPECIFIED IN CONTRACT DOCUMENTS.
35. INSTALL NEW TYPE 1 (1½" C) CONDUIT.
36. INSTALL NEW 4"X4"X4" JUNCTION BOX
37. DISCONNECT AT (E) PANEL-Q BRANCH CIRCUITS #13, 15, AND 17, AND LABEL BREAKERS AS SPARES.
38. INSTALL NEW TYPE 4 (2" C) CONDUIT
39. INSTALL AND TERMINATE INDICATOR LIGHT CABLES TO NEW TERMINAL BLOCKS AND WIRE TO SWITCH PANEL AS SHOWN IN PLANS AND APPROVED BY THE ENGINEER.
40. INSTALL LB FITTING.
41. INSTALL NEW LED PUSH BUTTON INDICATOR BOX.
42. PROVIDE NEW REVISED (TYPED WRITTEN) PANEL SCHEDULE.
43. INSTALL NEW TYPE 4 (1" C) CONDUIT.

PROJECT NOTES
(SAN MATEO - HAYWARD BRIDGE)

E-2

SHEET	OF
2	20

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REGISTERED CIVIL ENGINEER — DATE 3/12/10

RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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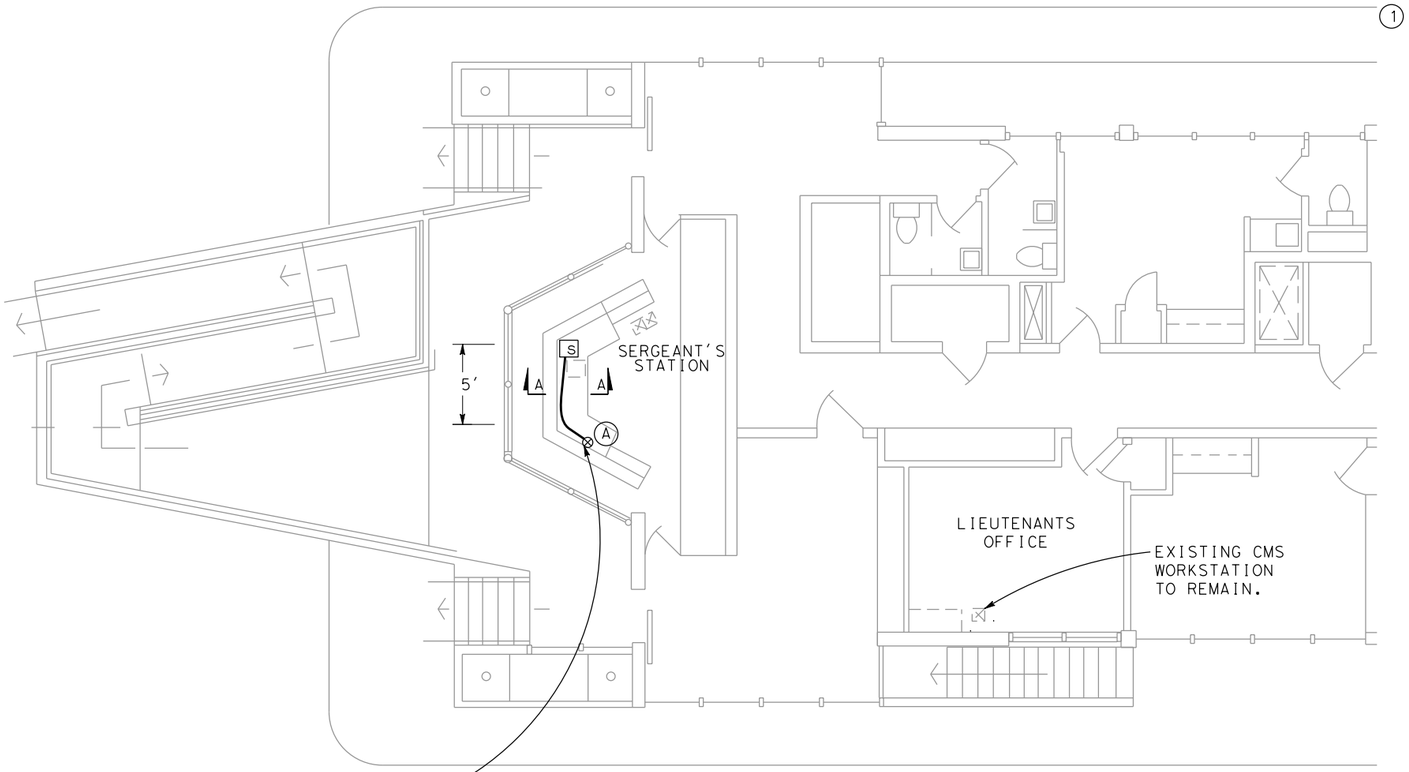
SAN JOSE, CA 95113

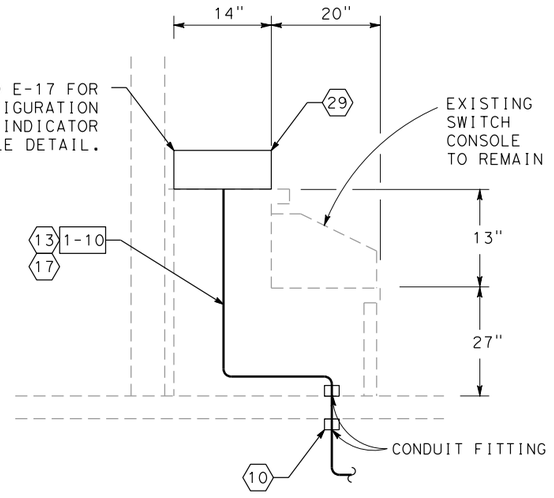
SHEET NOTES:

1. ANY EXISTING FURNITURE REQUIRED TO BE RE-ARRANGED FOR PLACEMENT OF INDICATOR LIGHT SWITCH CONSOLE SHALL BE COORDINATED WITH LIEUTENANT.
2. CONTRACTOR TO ROUTE ALL CABLES TO INDICATOR LIGHT SWITCH CONSOLE PANEL AND INSTALL CONDUIT SUPPORT SYSTEM TO NEATLY DRESS AND SECURE CONDUIT.



MAIN FLOOR - PARTIAL FLOOR PLAN VIEW

(1) SEE SHEETS E-16 AND E-17 FOR PROPOSED WIRING CONFIGURATION AND SHEET E-15 FOR INDICATOR LIGHT SWITCH CONSOLE DETAIL.



SECTION A-A

TOLL PLAZA OPERATIONS BUILDING
PARTIAL MAIN FLOOR CONDUIT ROUTING
(SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-3

SHEET	OF
3	20

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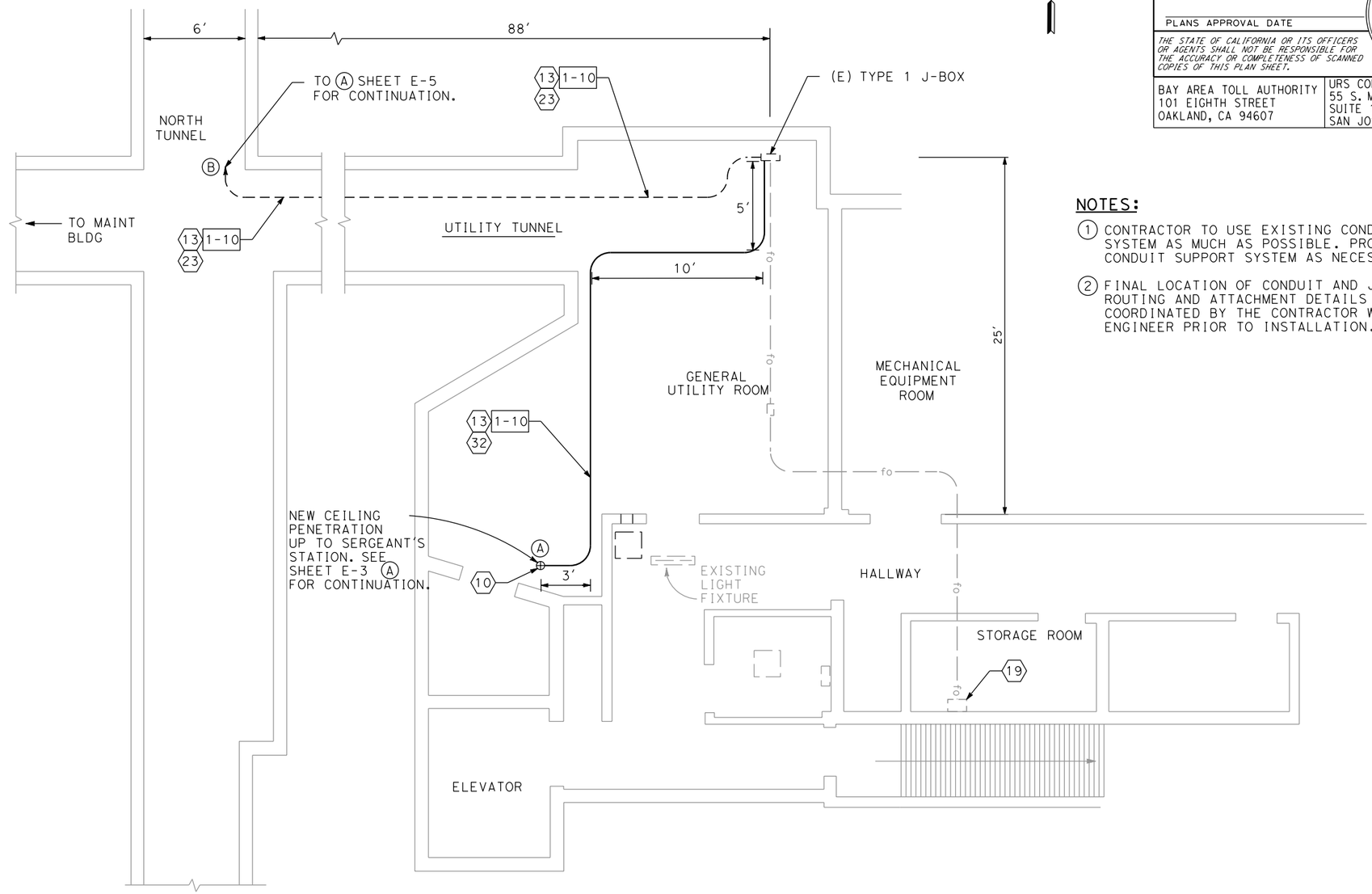

PLAN

NOTES:

1. CONTRACTOR TO USE EXISTING CONDUIT SUPPORT SYSTEM AS MUCH AS POSSIBLE. PROVIDE NEW CONDUIT SUPPORT SYSTEM AS NECESSARY.
2. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.

TOLL PLAZA OPERATIONS BUILDING LOWER LEVEL CONDUIT ROUTING (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-4

SHEET	OF
4	20

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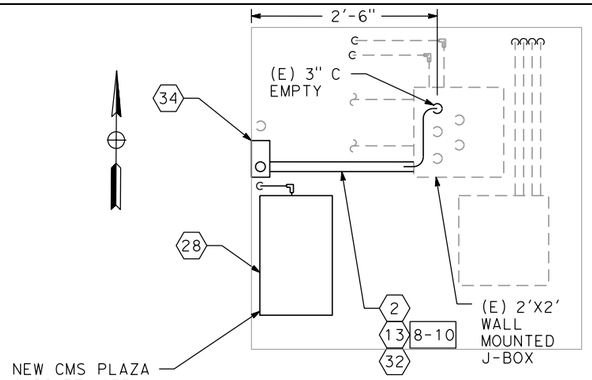
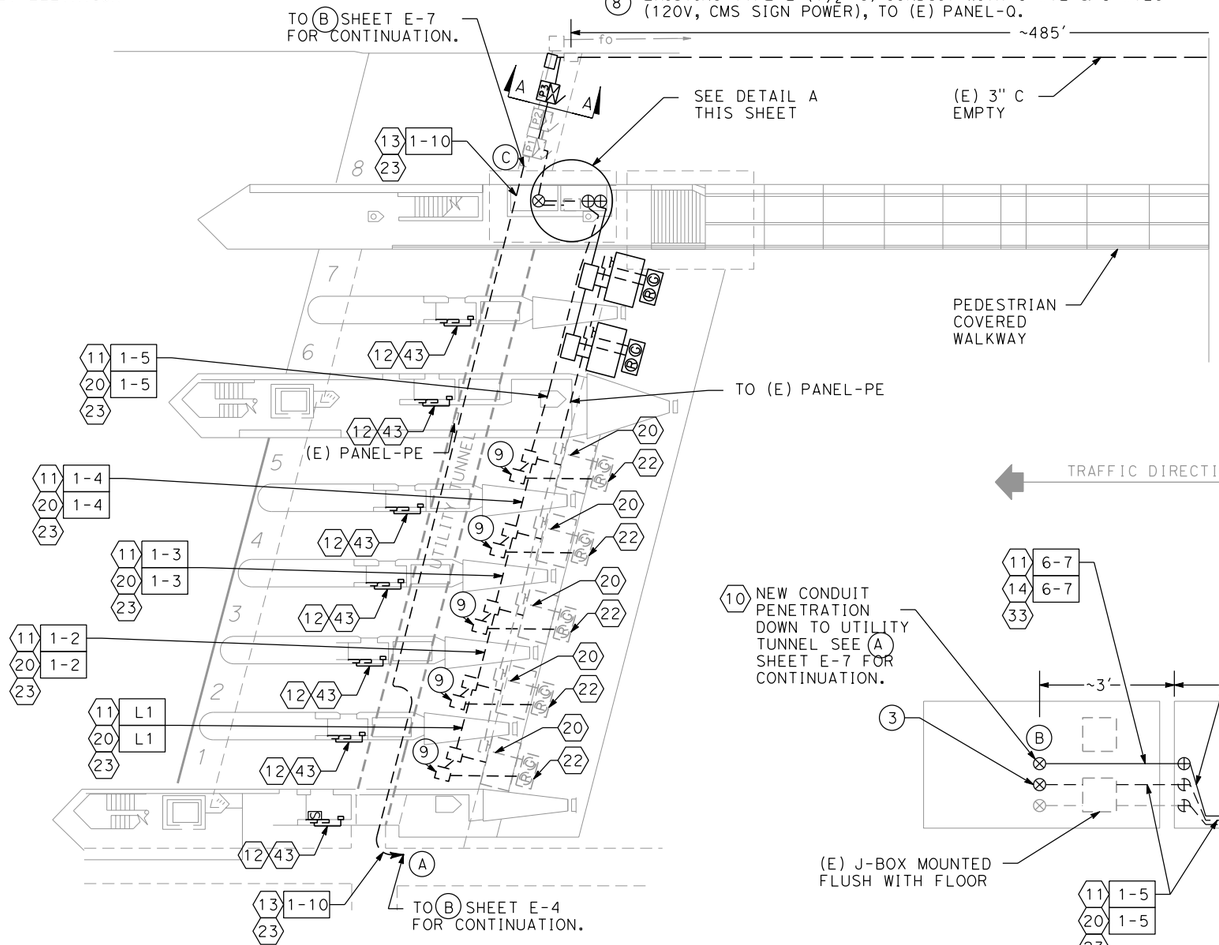
NOTES:

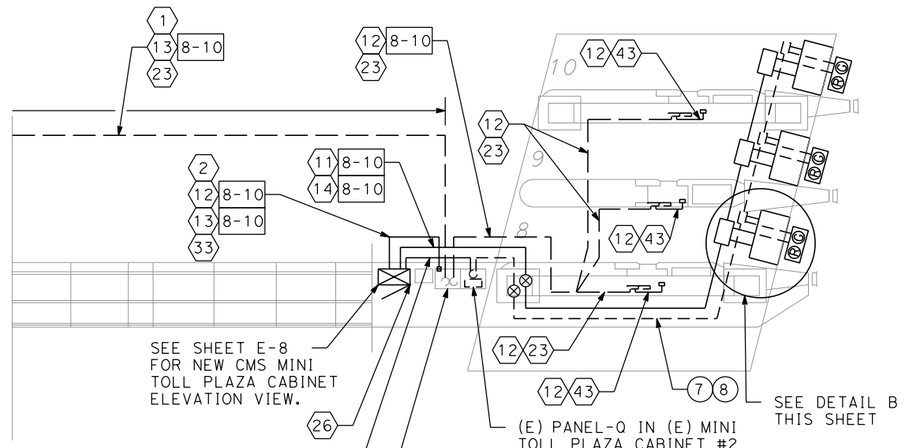
1. CONTRACTOR TO PROVIDE CONDUIT SUPPORT.
2. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.
3. CONTRACTOR TO REMOVE EXISTING INDICATOR LIGHT CABLE AND ROUTE NEW INDICATOR LIGHT CANOPY CABLE FOR LANES 1-5 THROUGH EXISTING CONDUIT DOWN TO UTILITY TUNNEL.
4. SEE SHEETS S-1 AND S-2 FOR CMS PANEL MOUNTING TO CANOPY DETAILS.
5. INSTALL TYPE 4 (1" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS SIGN POWER). SPLICE NEW CONDUCTOR TO EXISTING.
6. DISCONNECT (E) CIRCUIT FROM (E) EMS TO FACILITATE REMOVAL AND RECONNECT (E) BRANCH CIRCUIT TO (N) CMS SIGN.
7. REMOVE AND SCRAP (E) EMS DIMMING CONTROL CABLES BACK TO (E) MINI TOLL PLAZA CABINET #2.
8. EXISTING TYPE 2 (1½" C) CONDUIT WITH 6 #12 & 3 #12G (120V, CMS SIGN POWER), TO (E) PANEL-Q.
9. CONTRACTOR TO REMOVE EXISTING RELAY AND CABLING TO INDICATOR LIGHT AND ROUTE NEW INDICATOR LIGHT CANOPY CABLE TO EXISTING CMS PLAZA CABINETS. SEE SHEET E-16 FOR INDICATOR LIGHT WIRING DIAGRAM FOR LANES 1-5.
10. EXISTING TYPE 2 (1½" C) CONDUIT WITH 4 #12 & 2 #12G (120V, CMS SIGN POWER).



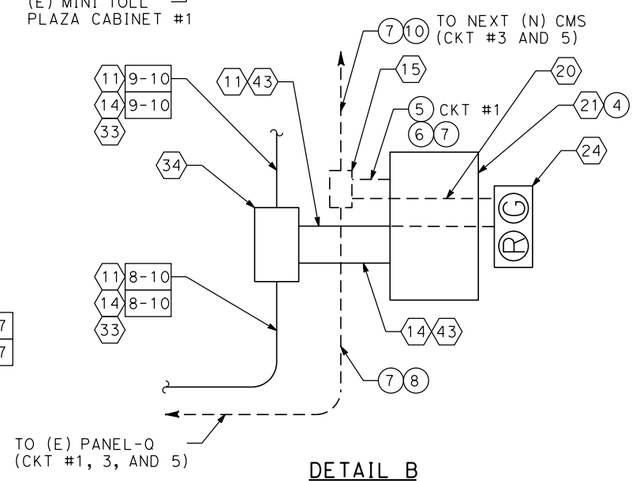
SECTION A-A



TUNNEL / CANOPY PLAN VIEW



DETAIL A



DETAIL B

TYPICAL CONDUIT INSTALLATION DETAIL FOR LANES 6-10

TOLL PLAZA OPERATIONS BUILDING TUNNEL TO CANOPY CONDUIT ROUTING PLAN VIEW (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-5

SHEET	OF
5	20

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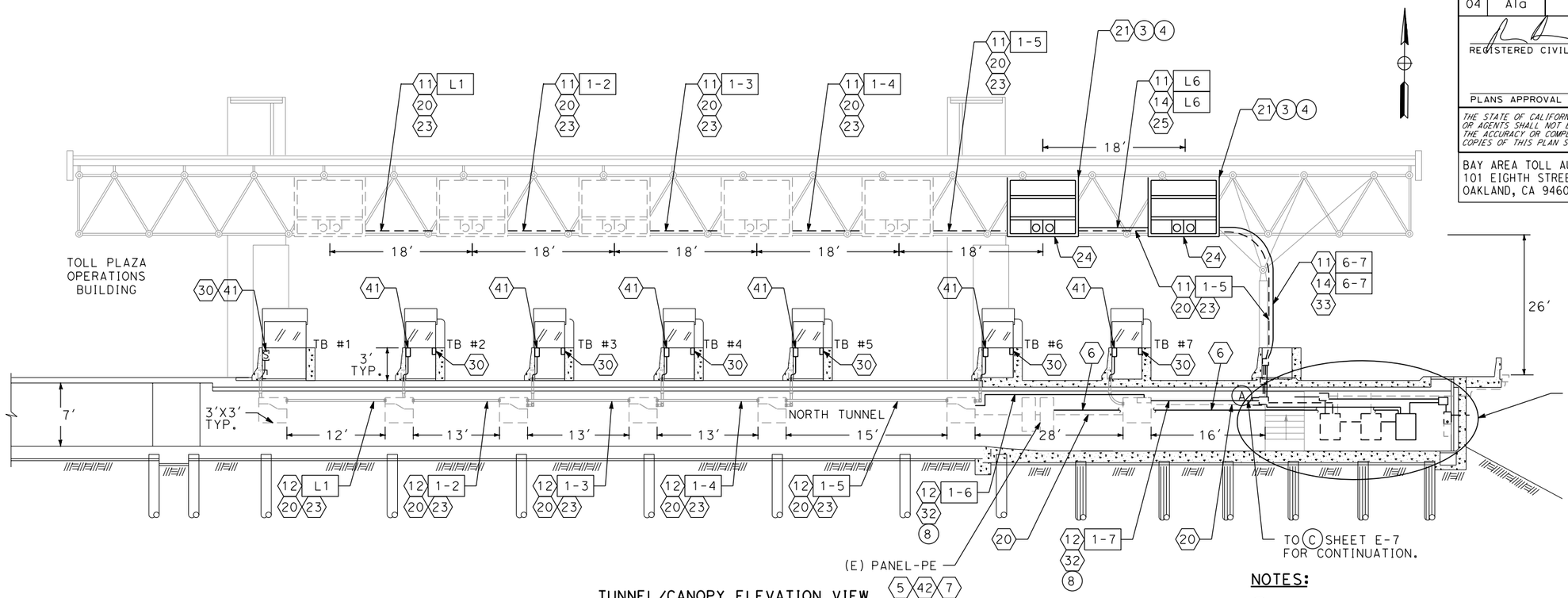
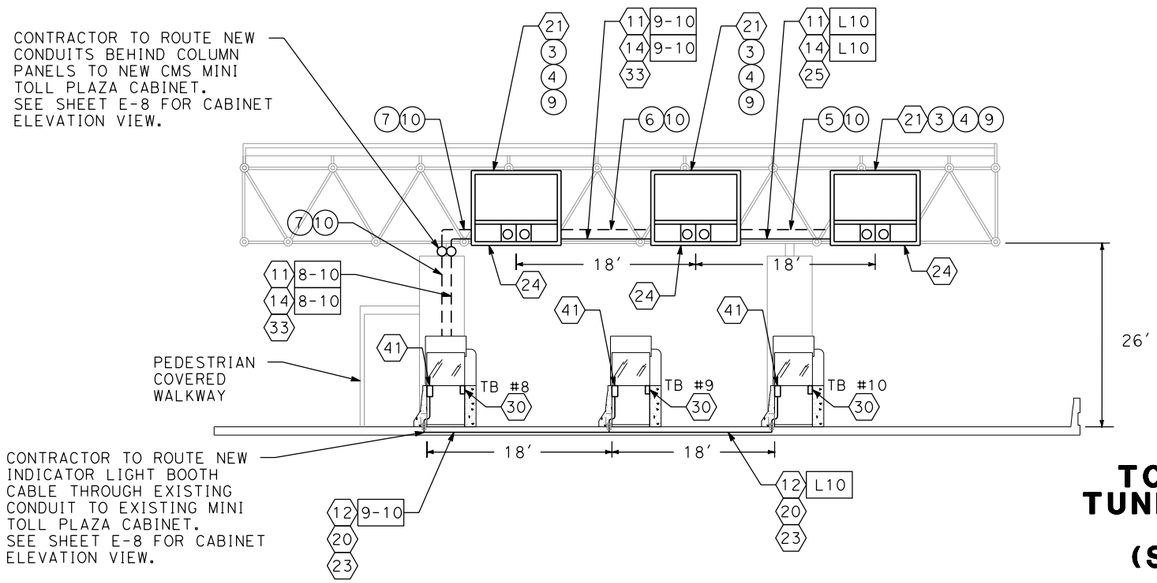


TUNNEL/CANOPY ELEVATION VIEW
LANES 1-7



CANOPY ELEVATION VIEW
LANES 8-10

NOTES:

1. CONTRACTOR TO PROVIDE CONDUIT SUPPORT.
2. FINAL LOCATION OF CONDUIT AND JUNCTION BOX ROUTING AND ATTACHMENT DETAILS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER PRIOR TO INSTALLATION.
3. REMOVE AND SALVAGE EXISTING EMS PANELS IN LANES 6-10 AND INSTALL NEW CMS PANELS.
4. SEE SHEETS S-1 AND S-2 FOR CMS PANEL MOUNTING TO CANOPY DETAILS.
5. EXISTING TYPE 2 (1½" C) CONDUIT WITH 2 #12 & 1 #12G (120V, CMS SIGN POWER).
6. EXISTING TYPE 2 (1½" C) CONDUIT WITH 4 #12 & 2 #12G (120V, CMS SIGN POWER).
7. EXISTING TYPE 2 (1½" C) CONDUIT WITH 6 #12 & 3 #12G (120V, CMS SIGN POWER), TO (E) PANEL-Q.
8. CONTRACTOR TO ROUTE CONDUIT AS TO NOT OBSTRUCT CABINET DOORS FROM OPENING.
9. DISCONNECT (E) BRANCH CIRCUIT FROM (E) EMS TO FACILITATE REMOVAL AND RECONNECT TO (N) CMS SIGN.
10. REMOVE AND SCRAP (E) EMS DIMMING CONTROL CABLES BACK TO (E) MINI TOLL PLAZA CABINET #2.

TOLL PLAZA OPERATIONS BUILDING TUNNEL TO CANOPY CONDUIT ROUTING ELEVATION VIEW (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-6

SHEET	OF
6	20

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ITEM	COMPONENT
①	INSTALL NEW CMS CONTROLLER.
②	REMOVE AND SALVAGE EXISTING ETHERNET SWITCH AT CABINET BOTTOM AND FURNISH AND INSTALL NEW RACK MOUNTABLE SWITCH WITH 14-10/100BASE-T AND 2-100BASE-FX(SM) PORTS. FIBER PORT TO MATCH EXISTING.INSTALL NEW SWITCH RIGHT UNDER CMS CONTROLLER (RACK MOUNTED-NO SHELVES.
③	EXISTING PLAZA F.O. PATCH PANEL. ADD 12 POSITION CONNECTOR PANEL TO ACCOMODATE NEW FIBER.
④	REMOVE/REPLACE EXISTING POWER STRIP WITH NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP.
⑤	EXISTING UPS TO BE REMOVED
⑥	NEW ELECTRICAL PANEL

ITEM	COMPONENT
⑦	EXISTING DATA TVSS TO BE REMOVED.
⑧	NEW 15 AMP GFI OUTLET
⑨	REMOVE EXISTING 15 AMP OUTLET
⑩	REMOVE EXISTING 1/4 AMP BREAKERS.
⑪	EXISTING ELECTRICAL PANEL
⑫	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
⑬	REMOVE/REPLACE EXISTING CMS CONTROLLERS WITH NEW CMS CONTROLLERS.
⑭	MOVE EXISTING EQUIPMENT TO ACCOMODATE NEW CABINET LAYOUT.
⑮	NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP

ITEM	COMPONENT
⑯	ONE (1) NEW 2 AMP BREAKER (120 VAC)
⑰	ONE (1) NEW NEC CLASS 3, 100 WATT 1:1, 120 VAC TRANSFORMER
⑱	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
⑲	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
⑳	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS. SEE SHEET E-20 FOR CABINET DRAWER LAYOUT.
㉑	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120 VAC) FOR POWER INDICATION

NOTES:

1. EQUIPMENT TO MEET CALTRANS TEES REQUIREMENTS.
2. REMOVED EQUIPMENT AND MATERIALS SHALL BE RETURNED TO BATA.
3. INSTALL NEW F.O. PATCH (CONNECTOR) PANEL NEXT TO EXISTING F.O. PATCH PANEL.
4. ALL EQUIPMENT SHALL BE SECURED. NO EQUIPMENT WILL BE LAYING IN BOTTOM OF CABINET. INSTALLATION SHALL BE NEAT, DRESSED AND ACCORDING TO THE PLANS.
5. CONTRACTOR SHALL SUBMIT MATERIAL SUBMITTALS FOR ALL CABINET COMPONENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
6. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS.
7. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.
8. CONTRACTOR TO LEAVE ONE (1) RACK UNIT OF SPACE AT BOTTOM OF CABINET.
9. EXISTING CMS CONTROLLER TO BE REPLACED WITH NEW CONTROLLER. NEW CMS CONTROLLER TO BE PROVIDED BY BATA.

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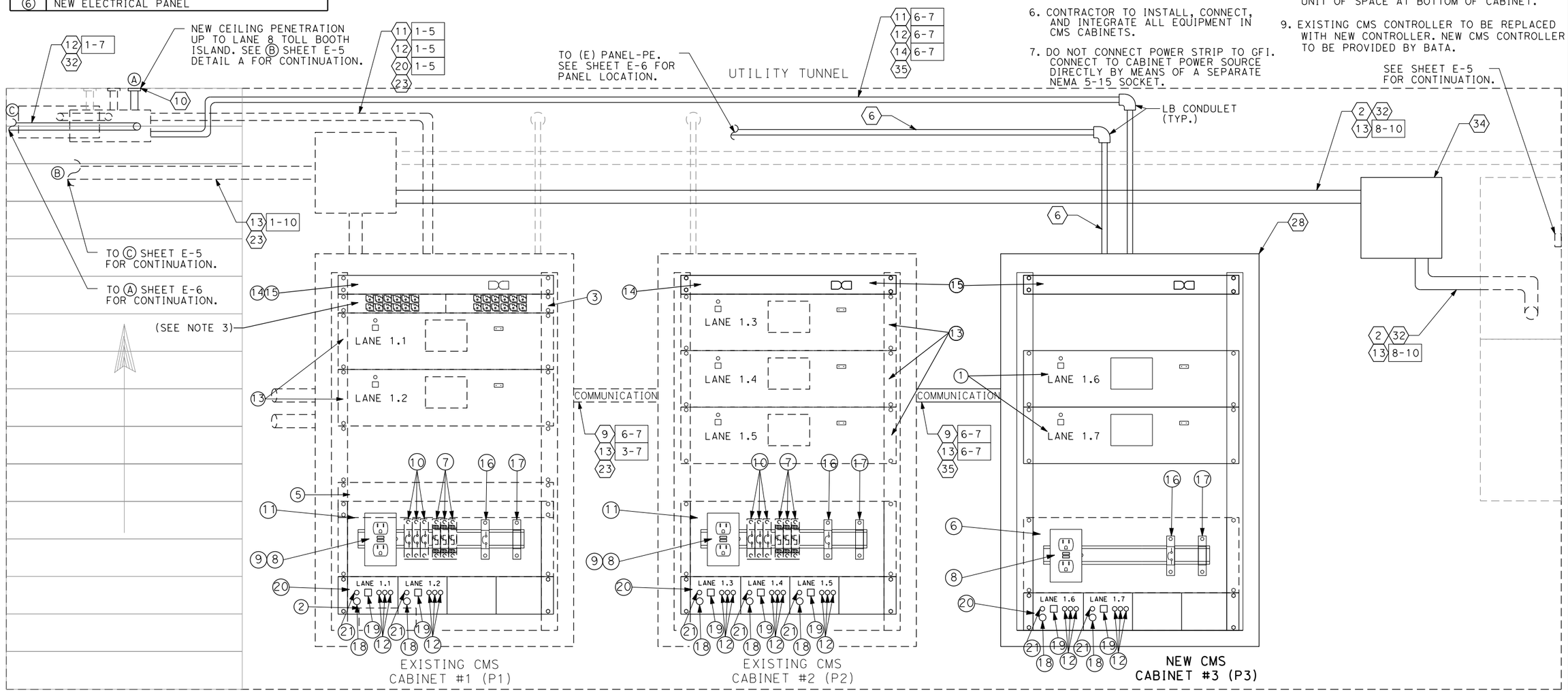

LANES 1-7 CMS CABINET ELEVATION VIEW

(SEE SHEET E-5 FOR CMS CABINET LOCATIONS)

LANES 1-7 CMS CABINETS ELEVATION VIEW (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-7

SHEET	OF
7	20

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ITEM	COMPONENT
①	NEW CMS CONTROLLERS
②	NEW 14-PORT RACK MOUNTABLE ETHERNET SWITCH WITH 2 FIBER PORTS.
③	NEW FIBER PATCH PANEL
④	NEW RACK MOUNTABLE IP ADDRESSABLE POWER STRIP
⑤	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
⑥	NEW ELECTRICAL PANEL

ITEM	COMPONENT
⑦	ONE (1) NEW 2 AMP BREAKER (120 VAC)
⑧	NEW 15 AMP GFI OUTLET
⑨	ONE (1) NEW NEC CLASS 3, 100 WATT 1:1, 120 VAC TRANSFORMER
⑩	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS. SEE SHEET E-20 FOR CABINET DRAWER LAYOUT.
⑪	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
⑫	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION

SHEET NOTES:

1. CONTRACTOR TO ROUTE NEW CONDUITS BEHIND EXISTING CABINETS AND PROVIDE CONDUIT SUPPORTS.
2. REMOVE AND SCRAP (E) EMS DIMMING CONTROL CABLES BACK TO (E) MINI TOLL PLAZA CABINET #2.
3. EXISTING TYPE 2 (1½" C) CONDUIT WITH 6 #12 & 3 #12G (120V, CMS SIGN POWER), TO (E) PANEL-Q.
4. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
5. CONTRACTOR TO INSTALL, CONNECT, AND INTEGRATE ALL EQUIPMENT IN CMS CABINETS (I.E., TRANSFORMERS, BREAKERS, ETC.).
6. CABINET AND EQUIPMENT TO MEET CALTRANS TEES REQUIREMENTS.
7. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.
8. CONTRACTOR TO LEAVE ONE (1) RACK UNIT OF SPACE AT BOTTOM OF CABINET.

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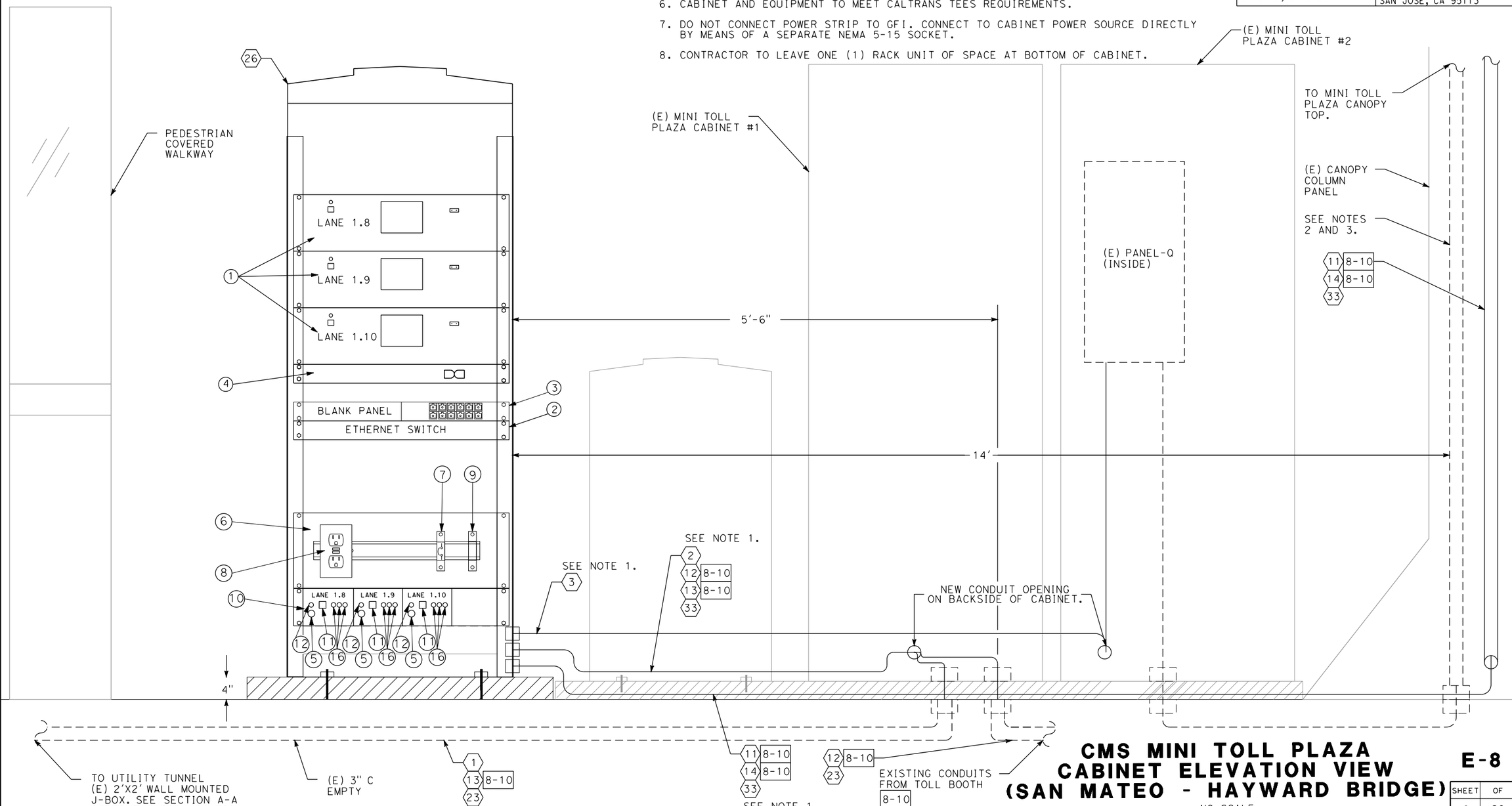

CMS MINI TOLL PLAZA CABINET ELEVATION VIEW (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-8

SHEET	OF
8	20

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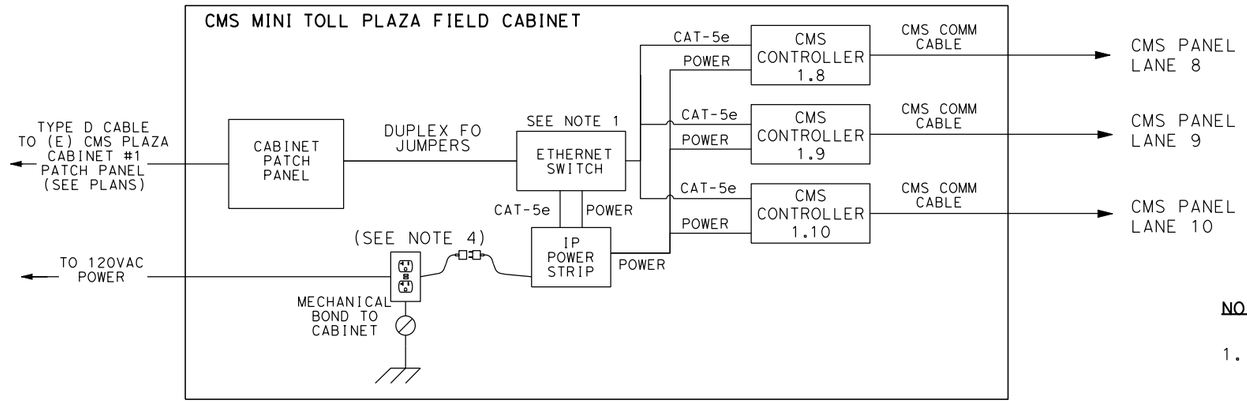

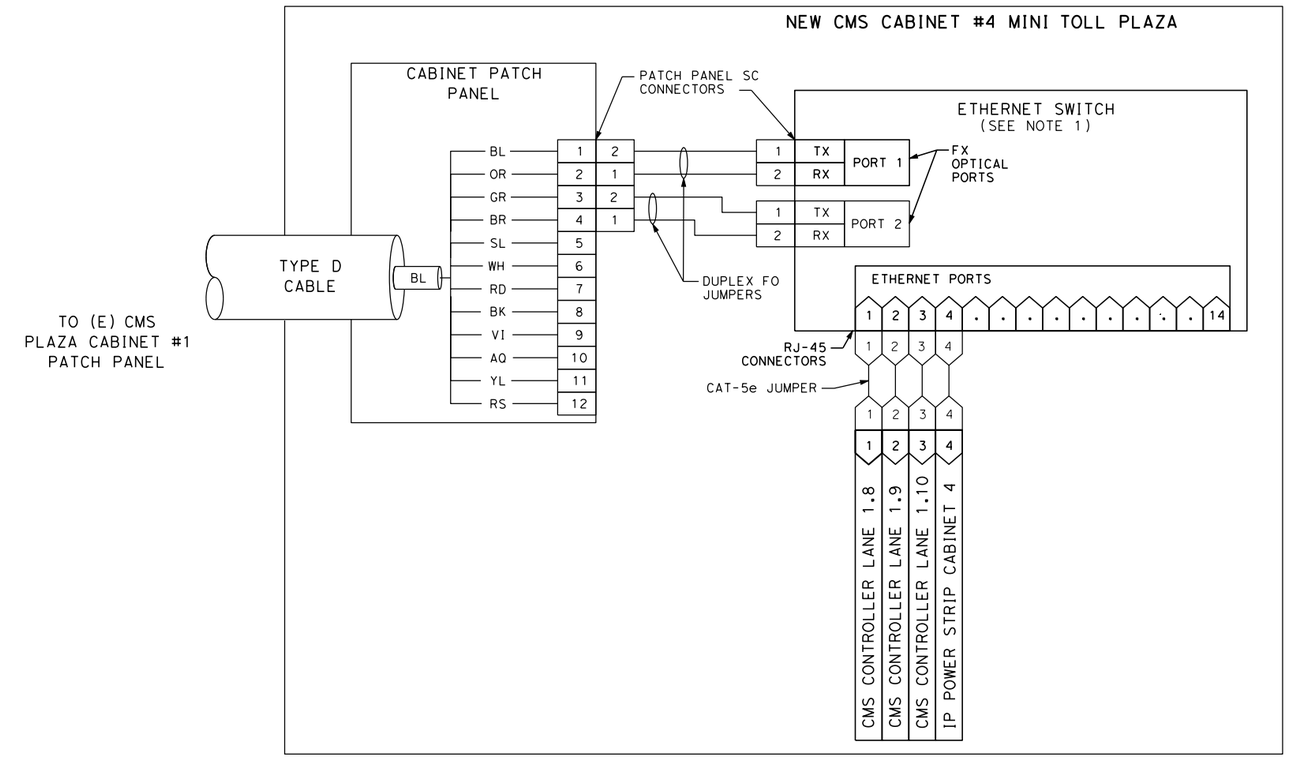

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	92	R2.59	112	123

REGISTERED CIVIL ENGINEER — DATE 3/12/10

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 CIVIL — STATE OF CALIFORNIA

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101 EIGHTH STREET
OAKLAND, CA 94607

URS CORPORATION
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

NOTES:

1. NEW ETHERNET SWITCH WITH MINIMUM 14 10/100 MBPS PORTS AND 2 FIBER 100 MBPS PORTS.
2. CONTRACTOR SHALL COORDINATE CLOSELY WITH BATA ON RE- CONFIGURATION OF CMS ETHERNET SWITCHES AND NETWORK OPERATIONS.
3. CONTRACTOR TO FIELD VERIFY THAT ALL TX/RX PORTS ARE MATCHED FOR PROPER OPERATIONS THROUGHOUT CMS NETWORK.
4. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.

CMS MINI TOLL PLAZA FIELD CABINET WIRING SCHEMATIC FOR LANES 8-10 (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-9

SHEET	OF
9	20

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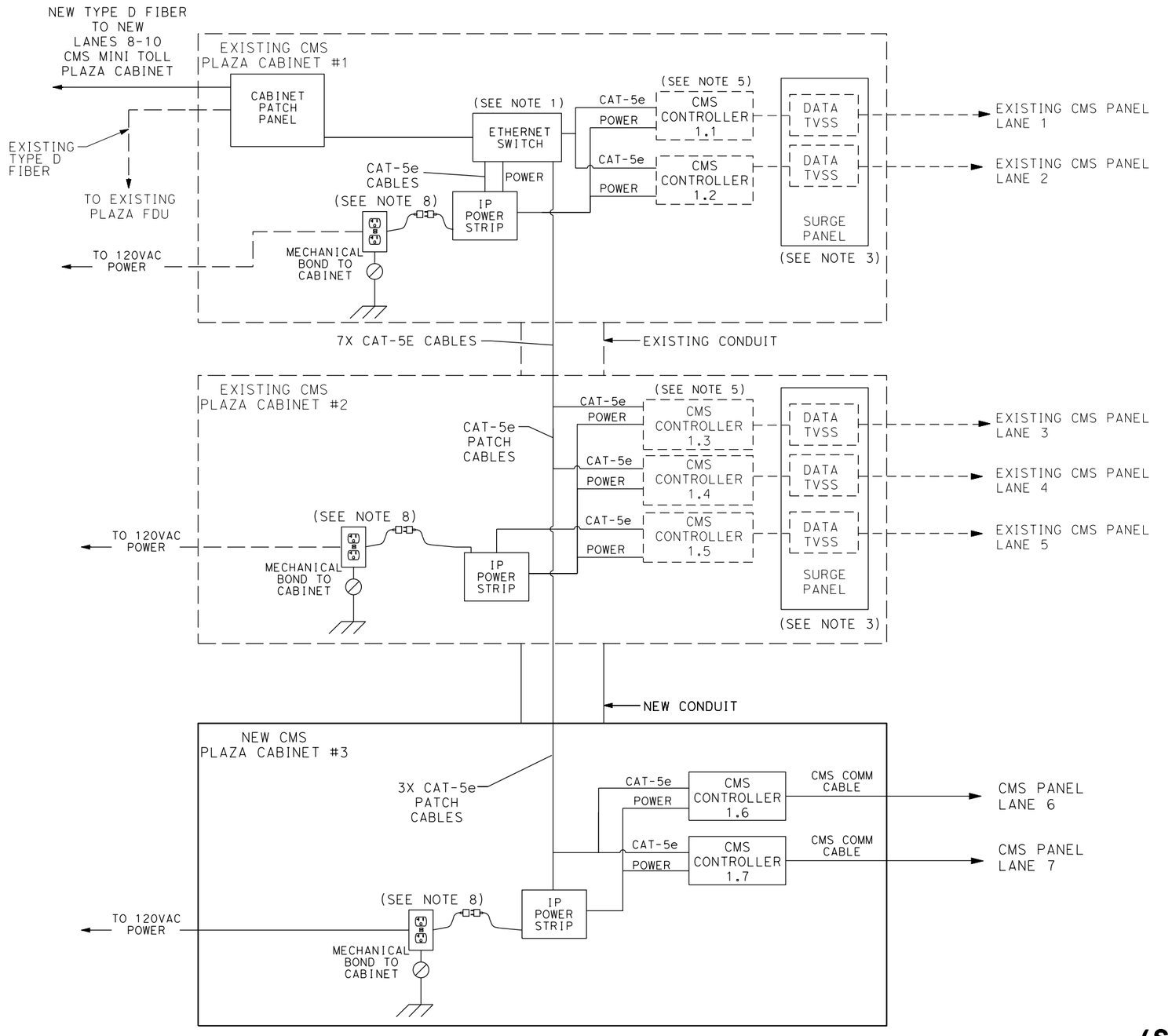

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NOTES:

1. REPLACE EXISTING GARRETCOM ETHERNET SWITCH IN CMS PLAZA CABINET #1 WITH NEW RACK MOUNTABLE SWITCH WITH MINIMUM 14 10/100 MBPS PORTS AND 2 FIBER 100 MBPS PORTS. OLD SWITCH SHALL BE RETURNED TO BATA.
2. ALL CABLING IN CMS CABINETS SHALL BE INSTALLED AND NEATLY DRESSED AND SECURED IN CABINETS. SPARE COILED CABLING SHALL BE PROVIDED IN JUNCTION BOXES.
3. CONTRACTOR TO REMOVE AND SALVAGE EXISTING TVSS. OLD TVSS SHALL BE RETURNED TO BATA.
4. SEE SHEETS E-5 AND E-6 FOR CMS CABINET LOCATIONS.
5. EXISTING CMS CONTROLLERS LOCATED IN EXISTING PLAZA CABINETS 1 AND 2 (LANES 1-5) SHALL BE REPLACED WITH NEW CMS CONTROLLERS TO BE PROVIDED WITH INTERNAL SURGE PROTECTION PER MANUFACTURER'S SPECS.
6. CONTRACTOR SHALL COORDINATE CLOSELY WITH BATA ON RE-CONFIGURATION OF CMS ETHERNET SWITCHES AND NETWORK OPERATIONS.
7. CONTRACTOR TO FIELD VERIFY THAT ALL TX/RX PORTS ARE MATCHED FOR PROPER OPERATIONS THROUGHOUT CMS NETWORK.
8. DO NOT CONNECT POWER STRIP TO GFI. CONNECT TO CABINET POWER SOURCE DIRECTLY BY MEANS OF A SEPARATE NEMA 5-15 SOCKET.

CMS PLAZA CABINET WIRING SCHEMATIC FOR LANES 1-7 (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-10

SHEET	OF
10	20

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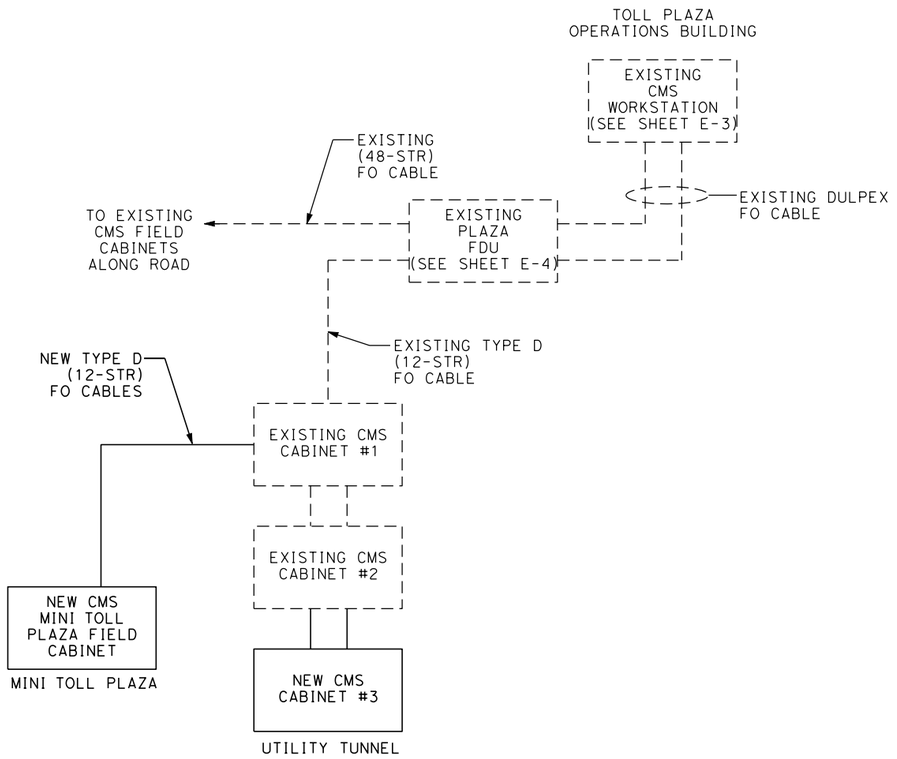
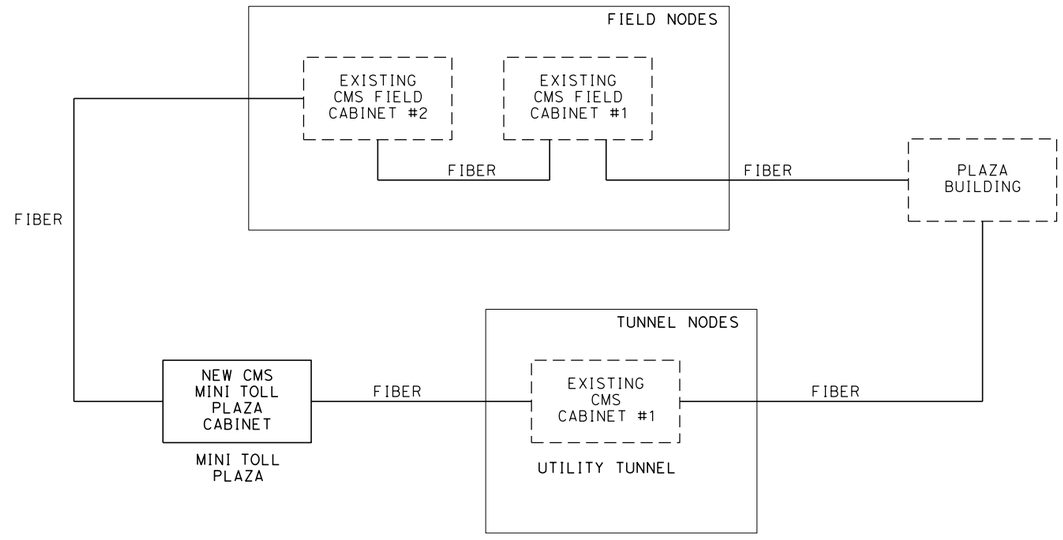


DETAIL A: CMS SYSTEM FIBER CABLE PLAN



DETAIL B: CMS SYSTEM LOGICAL ARCHITECTURE

CMS SYSTEM NETWORK DETAILS (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-11

SHEET	OF
11	20

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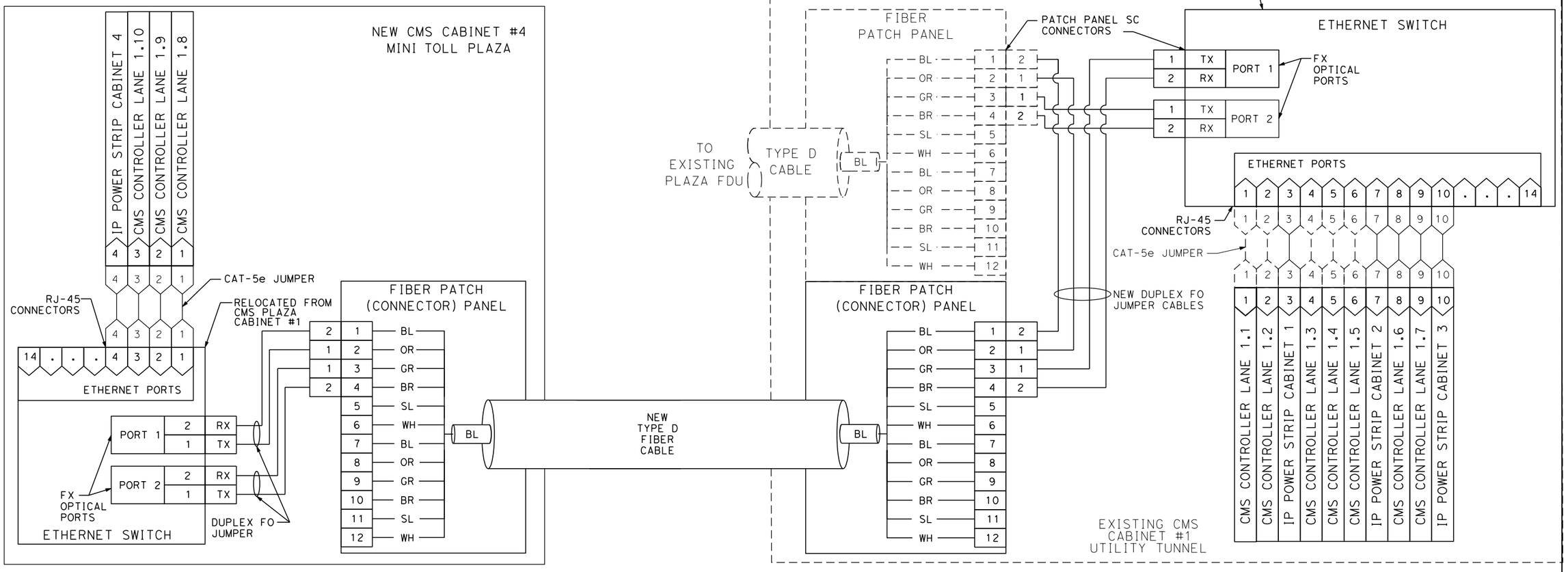
NOTES:

1. CONTRACTOR SHALL COORDINATE CLOSELY WITH BATA ON RE-CONFIGURATION OF CMS ETHERNET SWITCHES AND NETWORK OPERATIONS.
2. CONTRACTOR TO FIELD VERIFY THAT ALL TX/RX PORTS ARE MATCHED FOR PROPER OPERATIONS THROUGHOUT CMS NETWORK.



CMS SYSTEM FIBER ASSIGNMENTS (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-12

SHEET	OF
12	20

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04	Ala	92	R2.59	116	123

Carol Light
REGISTERED CIVIL ENGINEER

3/12/10
DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
CAROL LIGHT
No. 10145
Exp. 09/30/11
ELECTRICAL
STATE OF CALIFORNIA

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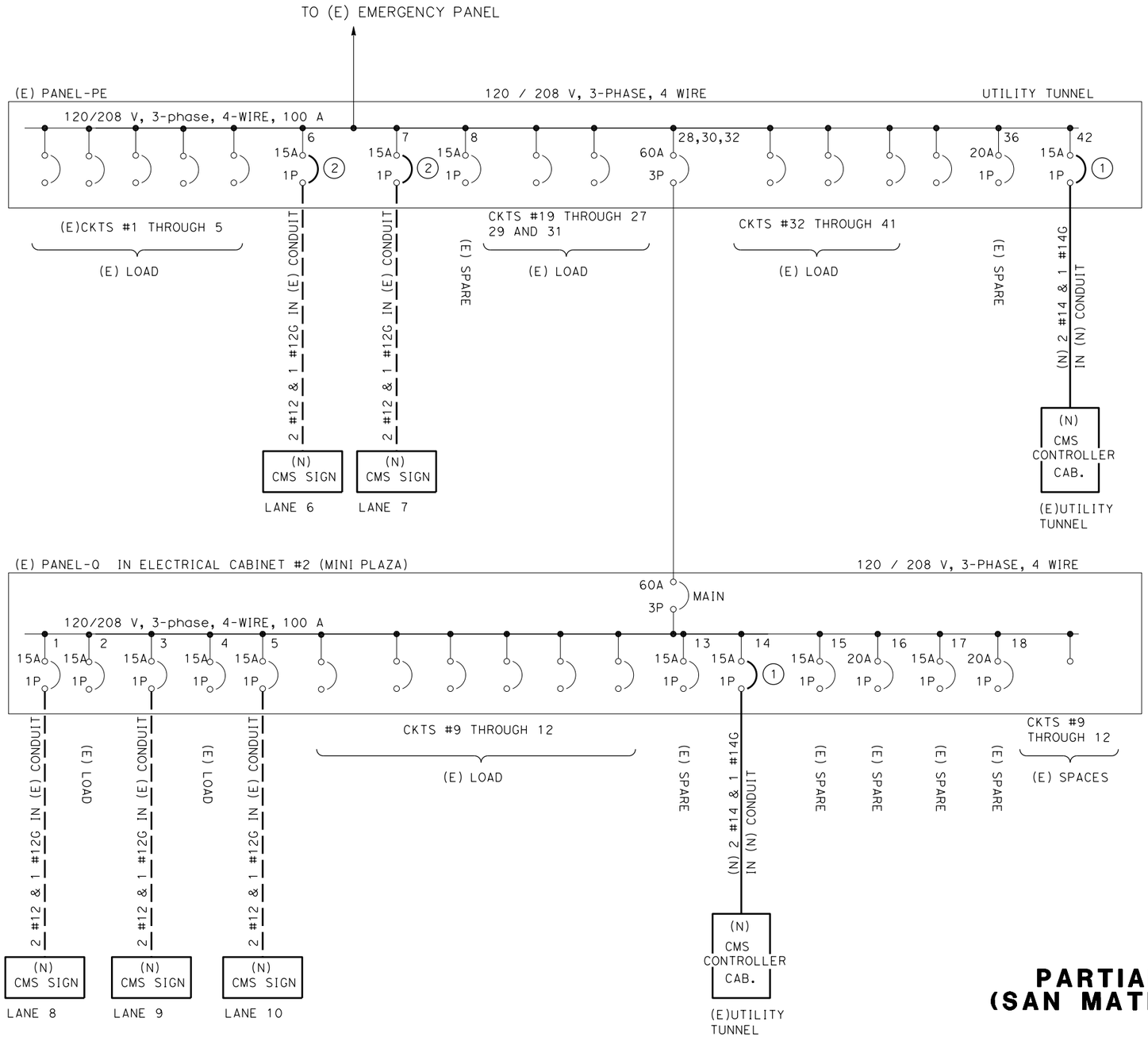

NOTES:

1. INSTALL NEW CIRCUIT BREAKER IN EXISTING SPACE.
2. REMOVE AND REPLACE (E) 20A-1P CIRCUIT BREAKER WITH ONE 15A-1P CIRCUIT BREAKER.
3. THE CMS CABINET AND SIGNS SHALL BE CONNECTED TO THE BUILDING GROUNDING SYSTEM BY THE EQUIPMENT GROUND CONDUCTOR IN EACH CONDUIT.
4. ALL METAL PARTS OF THE ELECTRICAL SYSTEM SHALL BE BONDED TOGETHER PER CONTRACT SPECIFICATIONS.

PARTIAL ONE LINE DIAGRAM (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-13

SHEET	OF
13	20

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Carol Light — REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — CAROL LIGHT — No. 10145 — Exp. 09/30/11 — ELECTRICAL — STATE OF CALIFORNIA

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101 EIGHTH STREET
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URS CORPORATION
55 S. MARKET STREET
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SAN JOSE, CA 95113

NOTES:

1. CONTRACTOR TO UPDATE BREAKER PANEL BOARD SCHEDULE AND PROVIDE A NEW TYPED WRITTEN PANEL BOARD SCHEDULE.

(E) PANEL- PE

PROJECT: BATA TO12 PLAZA CMS INSTALLATION

LOCATION: SAN MATEO BRIDGE NORTH TUNNEL

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(E) LN1 CMS SIGN & TRAFFIC LT	0.10		0.50	20	1	1	A	2	20	1	0.10		0.50	(E) LN 2 CMS SIGN & TRAFFIC LT
(E) LN 3 CMS SIGN & TRAFFIC LT	0.10		0.50	20	1	3	B	4	20	1	0.10		0.50	(E) LN 4 CMS SIGN & TRAFFIC LT
(E) LN 5 CMS SIGN & TRAFFIC LT	0.10		0.50	20	1	5	C	6	20	1	0.10		0.50	(N) LN 6 CMS SIGN & TRAFFIC LT
(N) LN 7 CMS SIGN & TRAFFIC LT	0.10		0.50	20	1	7	A	8	20	1				(E) SPARE
(E) TOLL BOOTH 1- LT & REC				20	1	9	B	10	20	1				(E) TOLL BOOTH #2 LT & RECEP
(E) TOLL BOOTH 3- LT & REC				20	1	11	C	12	20	1				(E) TOLL BOOTH #4 LT & RECEP
(E) TOLL BOOTH 5- LT & REC				20	1	13	A	14	20	1				(E) TOLL BOOTH #6 LT & RECEP
(E) TOLL BOOTH 7- LT & REC				20	1	15	B	16	20	1				(E) SPARE
(E) DAMPER MOTORS				20	1	17	C	18	20	1				(E) TOLL BOOTH FAN CONTROL PNL.
				60		19	A	20	50					
(E) CONDENSER UNIT- BOOTHS						21	B	22						(E) AIR HANDLING UNIT (ISOLATION X FMR)
					3	23	C	24		3				
				100		25	A	26	60					
(E) ELEVATOR #2						27	B	28						(E) PANEL- Q (MINI PLAZA)
					3	29	C	30		3				
(E) REC- SUMP PUMP ELEV PIT				20	1	31	A	32	20	1				(E) LTS NORTH TUNNEL LT & REC ELEV RM.
(E) REC- SUMP PUMP NORTH TUNNEL				20	1	33	B	34	20	1				(E) ELEVATOR #2 CAB LIGHT
(E) TOLL BOOTH COOLING CONTROL PNL				20	1	35	C	36	20	1				(E) SPARE
(E) SPARE				20	1	37	A	38	15	1			0.60	(E) CMS CONTROL CABINET CMS SIGN 1 & 2
(E) SPARE				20	1	39	B	40	15	1			0.70	(E) CMS CONTROL CABINET CMS SIGN 3, 4, 5
(E) SPARE				20	1	41	C	42	15	1			0.60	(N) CMS CONTROL CABINET CMS SIGN 6, 7
TOTALS SECTION 1	0.40	0.00	2.00								0.30	0.00	3.40	

VOLTAGE: 120/208V	LOAD SUMMARY			BALANCE:	(KVA)	%	AMPS:	ADDITIONAL FEATURES:
PHASE/WIRE: 3 PHASE / 4 WIRE	CONNECT LOAD	DEMAND FACTOR	DEMAND LOAD	PHASE A:	2.40	39.34	6.67	
RATING: 225A	0.70	125% OF LOAD	0.88	PHASE B:	1.90	31.15	5.28	
	0.00	NEC 220-13	0.00	PHASE C:	1.80	29.51	5.00	
MAINS: 150A-3P	5.40	1.00	5.40					
MOUNTING:	6.10 KVA		6.28 KVA					
	16.9 AMPS		17.4 AMPS					
A.I.C.:								
BUS SIZE:								S&L JOB #: 28016

(E) PANEL- Q

PROJECT: BATA TO12 TOLL PLAZA CMS INSTALLATION

LOCATION: SAN MATEO BRIDGE MINI-PLAZA

LOAD DESCRIPTION	LTG.	G.P. REC	OTH.	CB AMP	CB POLE				CB AMP	CB POLE	LTG.	G.P. REC	OTH.	LOAD DESCRIPTION
(N) CMS SIGN & TRAFFIC LT-LN 8	0.10		0.50	15	1	1	A	2	15	1				(E) CANOPY LT-LN 8
(N) CMS SIGN & TRAFFIC LT-LN 9	0.10		0.50	15	1	3	B	4	15	1				(E) CANOPY LT-LN 9
(N) CMS SIGN & TRAFFIC LT-LN 10	0.10		0.50	15	1	5	C	6	15	1				(E) CANOPY LT-LN 10
(E) LT & REC- TOLL BOOTH 8				15	1	7	A	8	15	1				(E) PTZ CCTV CAMERA ON CANOPY
(E) LT & REC- TOLL BOOTH 9				15	1	9	B	10	15	1				(E) FIXED CCTV CAMERA INSIDE BOOTHS
(E) LT & REC- TOLL BOOTH 10				15	1	11	C	12	15	1				(E) CABINET LIGHT
(E) SPARE				15	1	13	A	14	15	1			0.60	(N) CMS CONTROL CABINET
(E) SPARE				15	1	15	B	16	20	1				(E) SPARE
(E) SPARE				15	1	17	C	18	20	3				(E) SPARE
(E) SPACE					1	19	A	20		1				(E) SPACE
(E) SPACE					1	21	B	22		1				(E) SPACE
(E) SPACE					1	23	C	24		1				(E) SPACE
(E) SPACE					1	25	A	26		1				(E) SPACE
(E) SPACE					1	27	B	28		1				(E) SPACE
(E) SPACE					1	29	C	30		1				(E) SPACE
TOTALS SECTION 1	0.30	0.00	1.50								0.00	0.00	0.60	

VOLTAGE: 120/208V	LOAD SUMMARY			BALANCE:	(KVA)	%	AMPS:	ADDITIONAL FEATURES:
PHASE/WIRE: 3 PHASE / 4 WIRE	CONNECT LOAD	DEMAND FACTOR	DEMAND LOAD	PHASE A:	1.20	50.00	3.33	
RATING: 225A	0.30	125% OF LOAD	0.38	PHASE B:	0.60	25.00	1.67	
	0.00	NEC 220-13	0.00	PHASE C:	0.60	25.00	1.67	
MAINS: 60A-3P	2.10	1.00	2.10					
MOUNTING:	2.40 KVA		2.48 KVA					
	6.7 AMPS		6.9 AMPS					
A.I.C.:								
BUS SIZE:								S&L JOB #: 28016

PE AND Q PANELBOARD SCHEDULES (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-14

SHEET	OF
14	20

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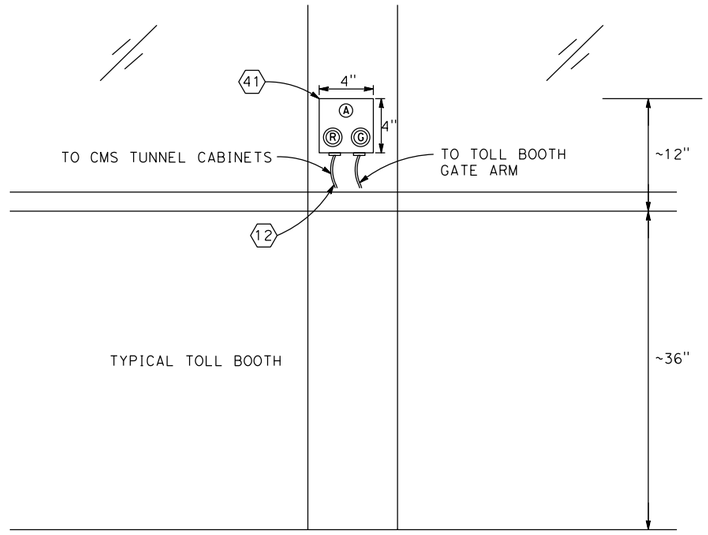
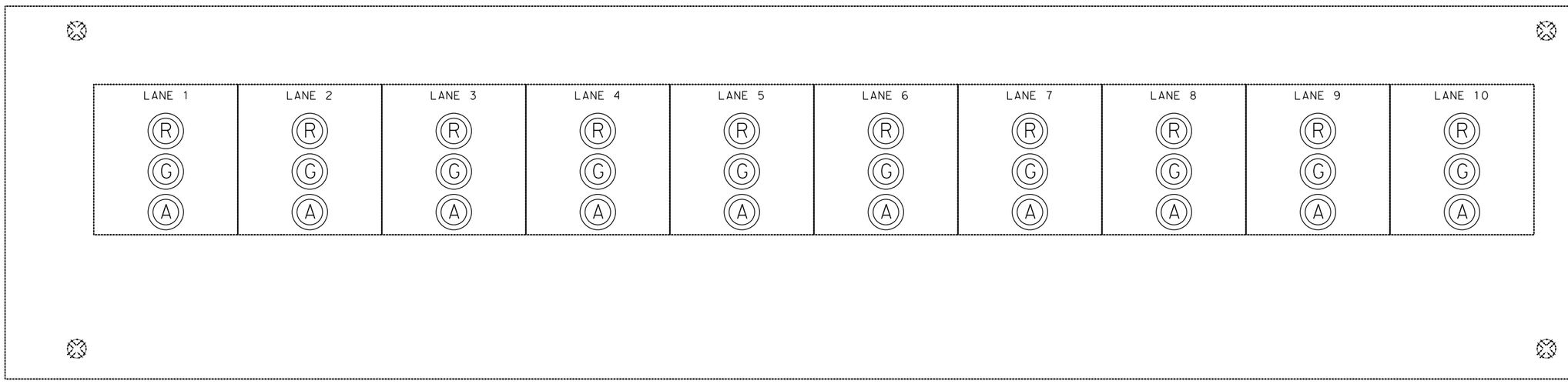
55 S. MARKET STREET
SUITE 1500
SAN JOSE, CA 95113

NOTES:

1. SIZE OF CONSOLE SWITCH PANEL WILL BE FIELD DETERMINED BY CONTRACTOR TO ACCOMMODATE NUMBER OF LANES.
2. SEE SHEET E-3 FOR LOCATION OF INDICATOR LIGHT SWITCH CONSOLE PANEL.
3. SEE SHEETS E-16 AND E-17 FOR PROPOSED WIRING CONFIGURATION.
4. CONTRACTOR TO LABEL PUSH BUTTON SWITCH WITH R, G, AND A LETTERS FOR RED, GREEN, AND AMBER LANE INDICATION.



NEW TOLL BOOTH INDICATOR LIGHT SWITCH BOX



NEW INDICATOR LIGHT SWITCH CONSOLE PANEL

LEGEND

- (R) PANEL MOUNT MOMENTARY RED LED ILLUMINATED PUSH BUTTON SWITCH
- (G) PANEL MOUNT MOMENTARY GREEN LED ILLUMINATED PUSH BUTTON SWITCH
- (A) PANEL MOUNT MOMENTARY AMBER LED ILLUMINATED PUSH BUTTON SWITCH
- (A) AMBER INDICATOR LED LIGHT

INDICATOR LIGHT SWITCH CONSOLE PANEL AND TOLL BOOTH INDICATOR SWITCH BOX (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-15

SHEET	OF
15	20

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NOTES:

1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-15 FOR INDICATOR LIGHT SWITCH CONSOLE PANEL DETAIL.
3. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP. ONE TRANSFORMER PER CMS CABINET.
4. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
5. BELDEN 5506UE OR APPROVED EQUIVALENT.
6. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
7. ONE (1) 2 AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) 2 AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
8. INTERCEPT EXISTING GATE ARM CABLE IN TOLL BOOTH.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 INDICATOR LIGHT CONTROL LANES.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHTS ON CANOPY.

LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 1/2 AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 7)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)

EXISTING CONFIGURATION

PROPOSED CONFIGURATION

INDICATOR LIGHT WIRING DIAGRAM FOR LANES 1-5 (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-16

SHEET	OF
16	20

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	92	R2.59	120	123

REGISTERED CIVIL ENGINEER — 3/12/10 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — RAMSEY J. HISSEN — No. C-39608 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

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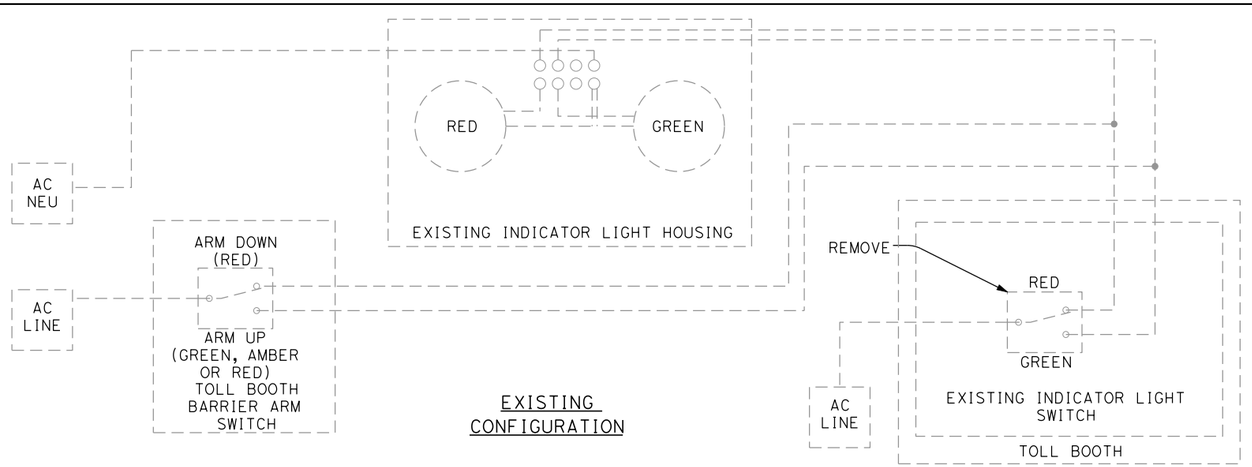
NOTES:

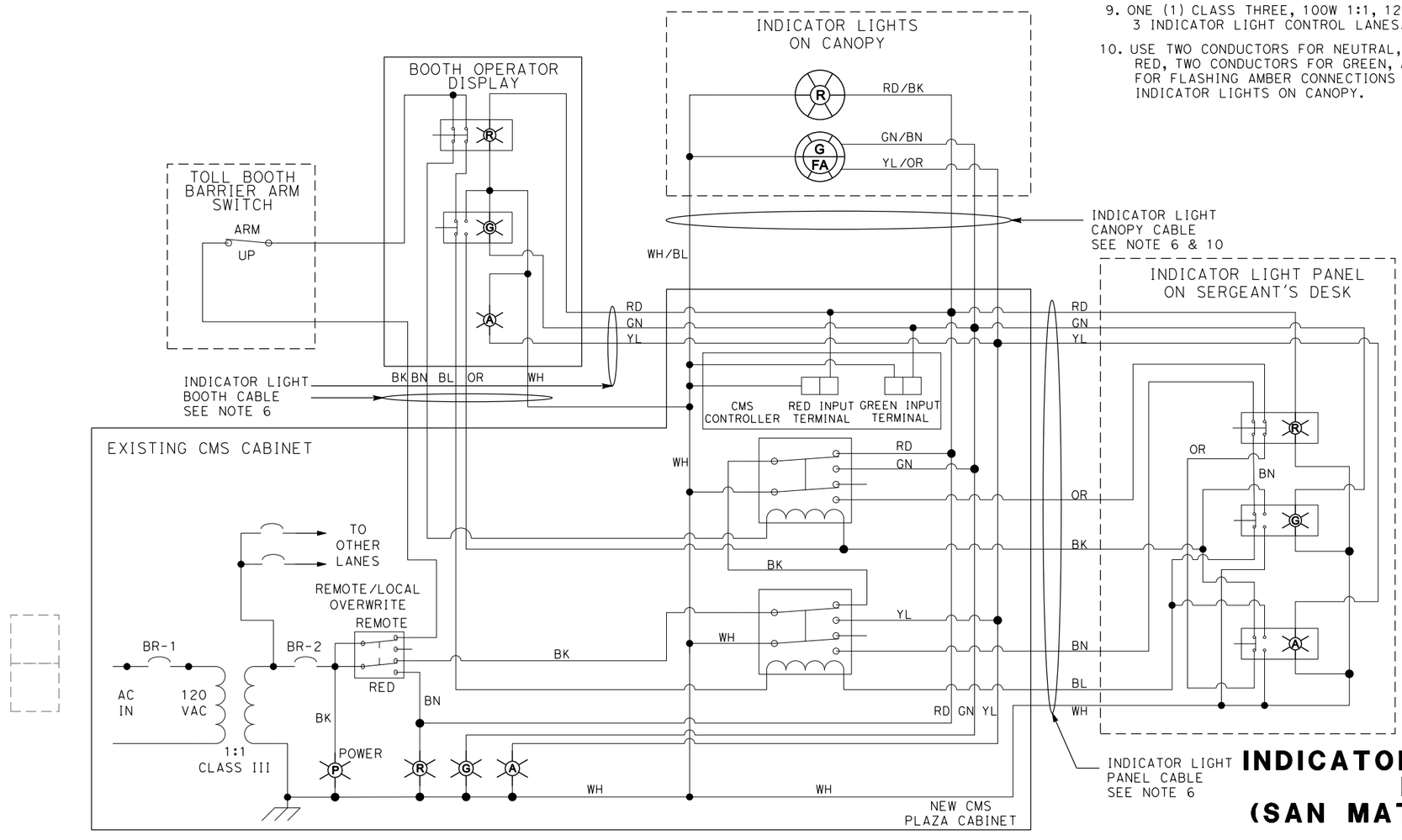
1. ELECTRICAL DIAGRAM SHOWS A SINGLE (ONE) FASTRAK LANE FOR SIMPLICITY.
2. SEE SHEET E-15 FOR INDICATOR LIGHT SWITCH CONSOLE PANEL DETAIL.
3. POWER TO TRANSFORMER FROM CMS CABINET POWER STRIP. ONE TRANSFORMER PER CMS CABINET.
4. REMOVE EXISTING SWITCH AND INSTALL NEW INDICATOR LED LIGHTS AND PUSH BUTTON SWITCHES ON WALL BOX.
5. BELDEN 5506UE OR APPROVED EQUIVALENT.
6. REPLACE EXISTING GREEN INDICATOR LIGHT ON CANOPY WITH NEW GREEN / FLASHING AMBER LED LIGHT.
7. ONE (1) 2 AMP PUSH BUTTON BREAKER PER CMS CONTROLLER OR THREE (3) 2 AMP PUSH BUTTON BREAKERS PER CMS CABINET WITH 3 CMS CONTROLLERS.
8. INTERCEPT EXISTING GATE ARM CABLE IN TOLL BOOTH.
9. ONE (1) CLASS THREE, 100W 1:1, 120 VAC TRANSFORMER PER 3 INDICATOR LIGHT CONTROL LANES.
10. USE TWO CONDUCTORS FOR NEUTRAL, TWO CONDUCTORS FOR RED, TWO CONDUCTORS FOR GREEN, AND TWO CONDUCTORS FOR FLASHING AMBER CONNECTIONS FROM CMS CABINET TO INDICATOR LIGHTS ON CANOPY.

LEGEND

- (G) GREEN INDICATOR LED LIGHT, 120 VAC
- (A) AMBER INDICATOR LED LIGHT, 120 VAC
- (R) RED INDICATOR LED LIGHT, 120 VAC
- (FA) FLASHING AMBER LED LIGHT, 120 VAC
- CMS CABINET TERMINAL BLOCK X-B
  X = LANE NUMBER
  B = TERMINAL BLOCK NUMBER
- BR-1 2A AMP BREAKER, 120 VAC (1 PER CMS CABINET)
- BR-2 1/2 AMP PUSH BUTTON BREAKER, 120 VAC (3 PER CMS CABINET - SEE NOTE 7)
- CLASS 3, 100 WATT 1:1,120 VAC TRANSFORMER (PER 3 CMS CONTROLLERS SEE NOTE 9)
- BREAKER
- CANOPY LED INDICATOR
- DPDT SWITCH
- DPDT RELAY
- NC + NC PUSH BUTTON SWITCH W/ INDICATOR
- NC + NO PUSH BUTTON SWITCH W/ INDICATOR
- PANEL MOUNT LIGHT INDICATOR (120 VAC)



EXISTING CONFIGURATION



PROPOSED CONFIGURATION

INDICATOR LIGHT WIRING DIAGRAM FOR LANES 6-10 (SAN MATEO - HAYWARD BRIDGE)

E-17

NO SCALE

SHEET	OF
17	20

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04	Ala	92	R2.59	121	123

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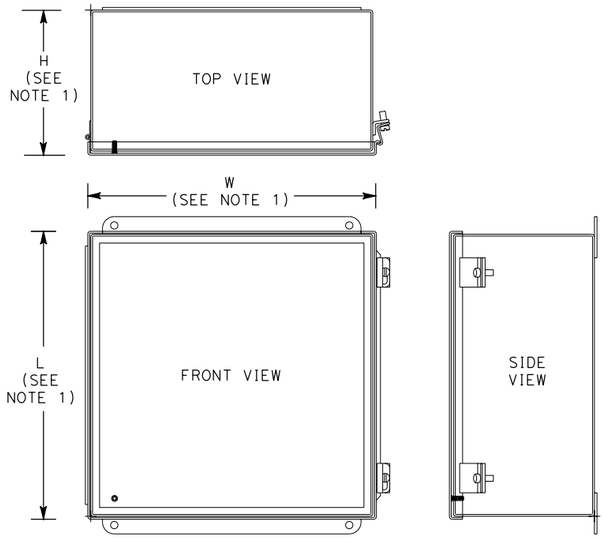
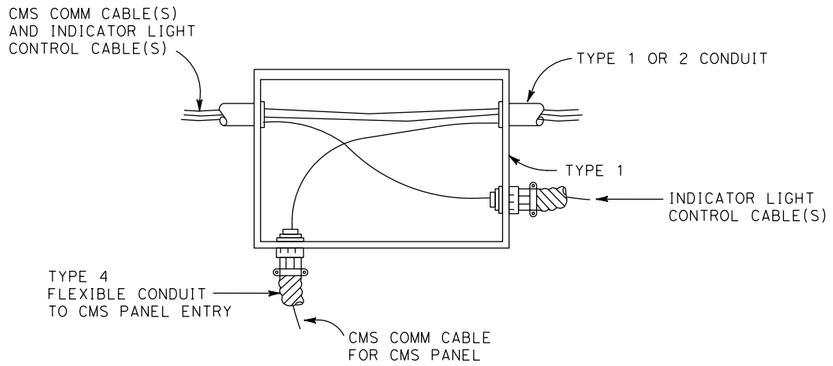
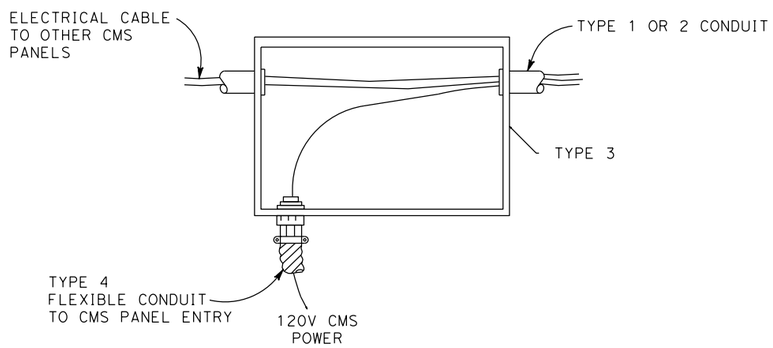


NEMA 4X JUNCTION BOX
(SHOWN WITH HINGE)





NOTES:

1. TYPE 1 NEMA 4X JUNCTION BOX (12"L X 12"W X 6"D, TYP.) OR AS REQ'D.
   TYPE 3 NEMA 4X JUNCTION BOX (5"L X 6"W X 4"D, TYP.) OR AS REQ'D.
2. MINIMUM SIZES OF JUNCTION BOXES SHOWN. CONTRACTOR SHALL CONFIRM SIZES AND QUANTITIES IN FIELD AND SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.
3. FOR JUNCTION BOX MOUNTED ON EXISTING CONCRETE WALLS OR SURFACE FLOOR MOUNTED USE ⅜" EXPANSION ANCHORS, TOTAL OF 4 FOR EACH BOX.
4. COIL A MINIMUM OF 3' OF CABLE FOR EACH DEVICE IN THE TYPE 1 AND TYPE 2 JUNCTION BOXES.

JUNCTION BOX DETAILS
(SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-18

SHEET	OF
18	20

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04	Ala	92	R2.59	122	123

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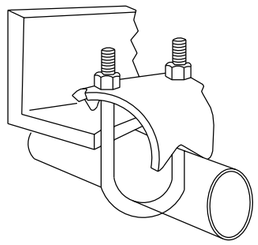
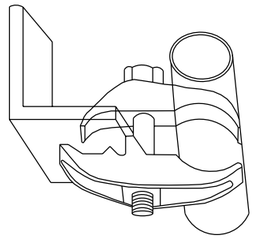
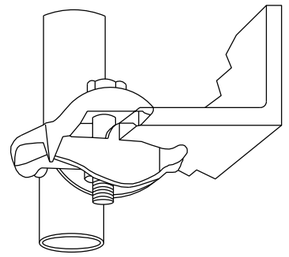


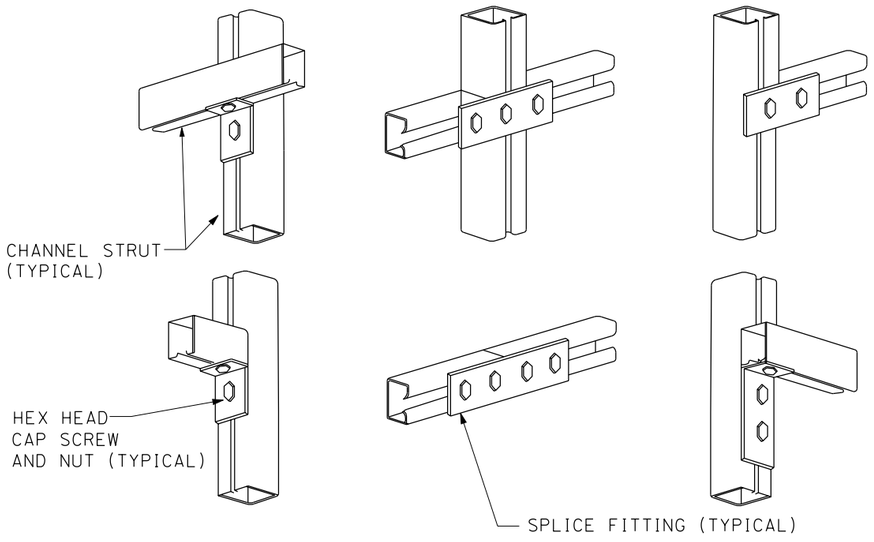
FOR MOUNTING PIPES OR CONDUIT AT RIGHT ANGLES TO THE BEAM DETAIL



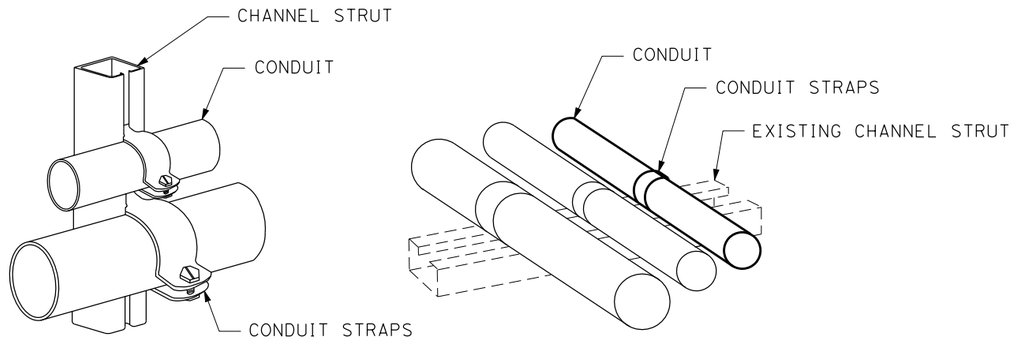
FOR MOUNTING PIPES OR CONDUIT PARALLEL TO THE BEAM DETAIL



FOR MOUNTING PIPES OR CONDUIT VERTICALLY ACROSS BEAM EDGE DETAIL



TYPICAL EQUIPMENT SUPPORT CHANNEL, FITTINGS AND FASTENERS



MOUNTING ON STRUT DETAILS

CONDUIT MOUNTING AND ATTACHMENT DETAILS (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

E-19

SHEET	OF
19	20

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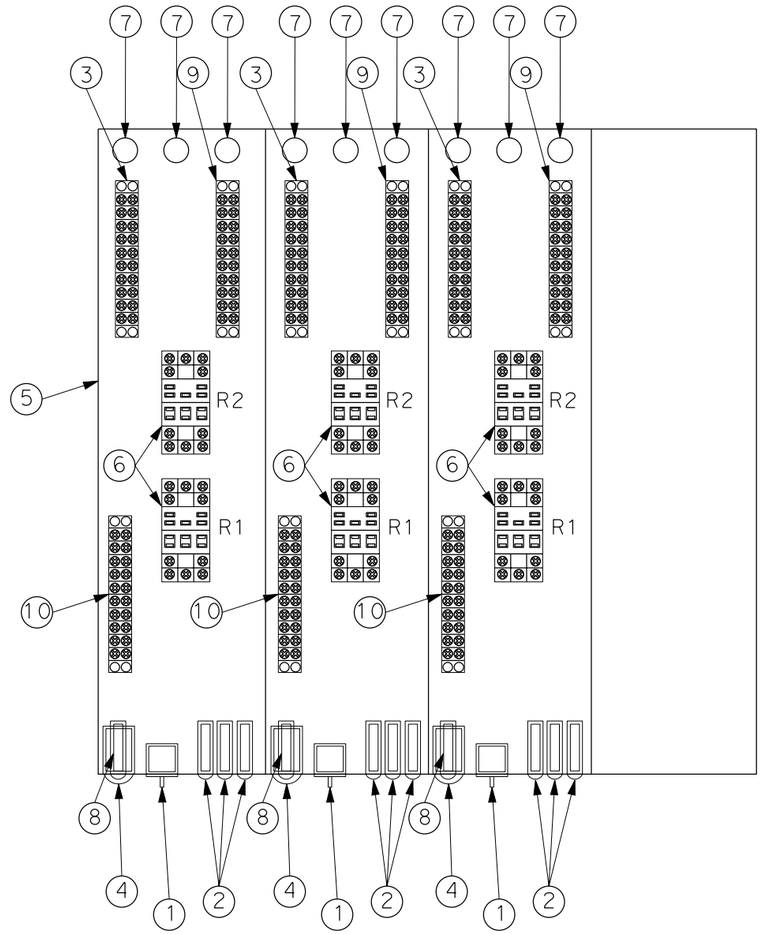
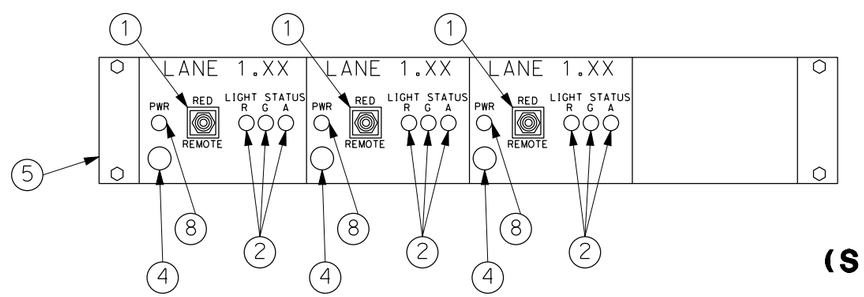
ITEM	COMPONENT
(1)	ONE (1) NEW PANEL MOUNT DPDT TOGGLE SWITCH
(2)	NEW PANEL MOUNT RED, GREEN, AMBER LED INDICATOR LIGHTS (120VAC)
(3)	TERMINAL BLOCKS FOR INDICATOR LIGHT CANOPY CABLE AND POWER
(4)	ONE (1) NEW PANEL MOUNT 1/2 AMP PUSH BUTTON BREAKER (120 VAC)
(5)	INSTALL NEW PULL OUT DRAWER FOR WIRING OF NEW INDICATOR LIGHT RELAYS.
(6)	TWO (2) NEW DPDT RELAYS
(7)	DRILLED HOLES AT BOTTOM OF DRAWER FOR INDICATOR LIGHT CABLE
(8)	NEW PANEL MOUNT BLUE LED INDICATOR LIGHT (120VAC) FOR POWER INDICATION
(9)	TERMINAL BLOCKS FOR INDICATOR LIGHT BOOTH CABLE
(10)	TERMINAL BLOCKS FOR INDICATOR LIGHT PANEL CABLE

TOP VIEW



FRONT VIEW



NOTES:

1. ALL EQUIPMENT SHALL BE SECURED. NO EQUIPMENT WILL BE LAYING IN BOTTOM OF CABINET. INSTALLATION SHALL BE NEAT, DRESSED AND ACCORDING TO THE PLANS.
2. CONTRACTOR SHALL SUBMIT MATERIAL SUBMITTALS FOR ALL CABINET COMPONENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT AND INSTALLATION.
3. INDICATOR LIGHT CABLES TO BE WIRED ACCORDING TO THE INDICATOR LIGHT WIRING DIAGRAMS AS SHOWN ON SHEETS E-16 TO E-17.
4. INDICATOR LIGHT DRAWER LAYOUT SHOWN FOR TYPICAL CMS CABINET.
5. ROUTE ALL CABLES THROUGH DRILLED HOLES AT BOTTOM OF DRAWER. INCLUDE PLASTIC GROMMETS IN HOLE.
6. TERMINATE ALL CABLES ON NEW TERMINATION BLOCKS.
7. FASTEN ALL CABLES TO DRAWER TO PREVENT STRAINING ON TERMINATION BLOCKS.
8. EACH CABINET DRAWER SHALL BE DESIGNED TO ACCOMMODATE UP TO FOUR (4) INDICATOR CONTROL LANES.
9. CONTRACTOR TO LEAVE AT LEAST ONE RACK UNIT OF SPACE BETWEEN DRAWER AND BOTTOM OF CABINET.

INDICATOR LIGHT CABINET DRAWER LAYOUT (SAN MATEO - HAYWARD BRIDGE)

NO SCALE

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SHEET	OF
20	20

E-20

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